

PSYCHOLOGICAL ABSTRACTS

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GENERAL (incl. Statistics)

590. Bénézé, G. *Allure du transcendantal.* (The attraction of the transcendental.) Paris: Vrin, 1936. Pp. 274. Fr. 40.—G. Goldman (Sorbonne).

591. Benjamin, A. C. *The operational theory of meaning.* *Phil. Rev.*, N. Y., 1937, 46, 644-649.—An operation is an act by which awareness passes from one content to another. Some of the most common operations are generalizing, classifying, ordering, inferring, measuring, pointing, abstracting, constructing, describing, explaining, and negating. Operations may be performed upon objects to produce symbols or they may be performed upon symbols to produce other symbols. If objects are clearly present, one need not go to any great trouble to show how to find them, but if objects are obscurely given, one must describe in some detail the routes by which one may locate them. The operational theory enables us to talk meaningfully about all suppositional entities and does not prevent objects which have a conjectural status from occupying the realm of the given. The operational theory is essentially methodological rather than metaphysical. It is compatible with spiritualism and materialism, monism and pluralism. It affords the most promising principle for settling philosophical disputes.—M. F. Martin (W. Springfield, Mass.).

592. Bennett, A. L. *A synchronous motor electric time clock.* *Amer. J. Physiol.*, 1937, 119, 271.—"This clock provides electrical contact at intervals of 1, 2, 5, 10, 15, 30 and 60 seconds as well as 5, 15, 30 and 60 minutes without adjustment of any clock contacts. . . . A small synchronous electric clock motor is mounted on a panel of insulation material. Contacts are inserted through the panel so that the 'second' hand makes contact with the outer circle of sixty points while an extension of the 'minute' hand reaches the inner circle of twelve points. . . . In order to use the 110-A.C. current to activate the relays as well as run the clock, a 10,000 ohm, sensitive relay is placed in circuit with the clock contacts."—T. W. Forbes (Harvard Bureau for Traffic Research).

593. Birnbaum, F. *Alfred Adler. In memoriam.* *Int. Z. indiv. Psychol.*, 1937, 15, 97-127.—After a brief biographical account, the author discusses Alfred Adler (1870-1937) as psychologist, characterologist, and teacher of life. The difficulty of classifying individual psychology among other systems arises from the fact that it embraces all three aspects under which they are divided (experience, behavior, and mental science). Classification of the partial and static systems within the dynamic schema of

individual psychology opens the way for cooperation. Most of the "characterologies" discussed in the handbooks are merely psychologies of individual differences. Characterology should be concerned with the perspective, the life plan. The individual should build his relations with his neighbors in the spirit of friendship and should make his contribution to the evolution of humanity. Recognizing the unity of the problem, Adler avoided drawing a sharp distinction between psychotherapy, pedagogy, and politics; so neurosis appeared to him not as a problem of medical science alone but as a culture problem. In the last part of his creative life Adler turned above all to problems of social evolution. Portrait.—M. F. Martin (W. Springfield, Mass.).

594. Blondel, A. *Sur l'étude expérimentale des signaux colorés destinés à la navigation.* (An experimental study of colored signals designed for navigation.) *C. R. Acad. Sci., Paris*, 1937, 204, 1695-1698.—A detailed description of a "pharometer" for exact colored signals, designed for indicating how near a navigator may approach a beacon outside the limit of range for recognition of color in signals.—G. Goldman (Sorbonne).

595. Cattell, J. McK. *University presidents who have been psychologists.* *Sci. Mon.*, N. Y., 1937, 45, 473-477.—Stanley Hall became president of the newly established Clark University in 1888. Presidents Bryan at Indiana, Farrand at Cornell, and Angell at Yale only this year retired from presidencies held by them for a considerable time. Other psychologist-administrators are Scott at Northwestern, Lindley at Kansas, and Chase at New York University. (Portraits of Bryan, Farrand and Angell).—O. P. Lester (Buffalo).

596. Edel, A. *Two traditions in the refutation of egoism.* *J. Phil.*, 1937, 34, 617-628.—Arguments will not prove or disprove any theory of egoism. The only effective way to deal with the problem of egoism is by social action, not theoretical refutation.—J. G. Miller (Harvard).

597. Gérard, W. *Psychologie und Psychologe.* (Psychology and the psychologist.) ** Arch. ges. Psychol.*, 1937, 98, 331-336.—The wider a science roams into other sciences with its problems the greater become the difficulties of research. Psychology has many related fields. Its difficulties are added to also by the fact that the observed and the observer are one. A psychology that depends upon objective observation only is doomed to failure because it is unable to explain all of life. Psychology has no such positive fundaments as do other sciences. Consciousness does not probe easily into the theoretical understanding of the self. It is concerned with

the objective world and tries to reduce consciousness to it, thereby destroying its very nature. Progress has been held back in the field of psychology because of failure to keep to the material of the field. With Jaensch the author sees unity between the psychic and the physical aspects of the self. Psychology is fundamental to all other sciences. Observation and reflection are its methods, as they are the methods of research in all scientific fields.—*A. B. Herrig* (Michigan Central State Teachers College).

598. **Guillaume, P.** *La psychologie de la forme.* (On the psychology of form.) Paris: Flammarion, 1937. Pp. 236. Fr. 16.—The author gives special attention to those studies on this theory which are based on the postulate of the generality of types of preferential forms, such as have been studied in perception experiments, which offer very marked analogies with preferential forms in the physical world. She sees living beings as parts of the physical world and their functions, with respect to particular modes, as general physical relationships. The discussion continues with the question of the origin of the idea of form (physical and physiological) as related to the psychology of perception, the ego and action, memory, intelligence, and expression. In conclusion the author indicates the philosophical position of the theory of form and discusses some of the criticisms offered. There are 58 titles in the bibliography.—*M. H. Piéron* (Sorbonne).

599. **Hische, W.** *Theoretische und praktische Psychologie—eine Einheit.* (The unity of theoretical and practical psychology.) *Ber. 15. Kongr. dtsh. Ges. Psychol., Jena, 1936, 247-254.*—Theoretical and practical psychology are no longer separated, but organically connected into a living unity. This also eliminates the distinction between experimental and philosophical approaches and between separate terminologies, so that eventually different schools will cease to be individual entities. Psychological investigations must be limited to facts which are essential to the people, and preference should be given to problems which are general and permanent. Such a science would not only be based on life itself but would be inseparably connected with it through a community of interest and needs existing between science and the German people.—*H. Beaumont* (Kentucky).

600. **Hische, W.** *Gedenkrede, gehalten am Sarge von Georg Elias Müller, in Göttingen, am 27. Dezember 1934.* (Eulogy given at the coffin of G. E. Müller in Göttingen, Dec. 27, 1934.) *Z. Psychol., 1935, 134, 145-149.*—*P. F. J. Lehner* (Brown).

601. **Holub, A.** *Alfred Adler in seiner Bedeutung für die somatische Medizin.* (Alfred Adler in his significance for somatic medicine.) *Int. Z. indiv. Psychol., 1937, 15, 134-141.*—Adler saw the whole personality. His early studies of organ inferiority and of the reciprocal effects of organs upon each other paved the way for the later development of typology and endocrinology by other scientists. Building upon the inferiority of organs, he bridged

the gap from the physical to the mental and thence to the social. Where the dogma of causality had reigned, Adler's teleological outlook had revolutionary effects. Adler demanded that the physician should never forget the imponderables—especially encouragement. Courage and the feeling of strength affect even the vegetative processes. They increase resistance to infection.—*M. F. Martin* (W. Springfield, Mass.).

602. **Hummon, I. F., Jr.** *A photocell multiform stimulator.* *Amer. J. Physiol., 1937, 119, 340-341.*—"The construction of the stimulator provides for (1) a stationary waveform mask; (2) means for passing a very narrow beam of light over this mask at variable speeds; (3) lenses to throw this beam of light upon photocells, and (4) other accessory equipment. Because the waveform mask is stationary it may be varied during stimulation. Two photocells are used which make it possible to produce true alternating currents. A variable speed drive controlling the passage of the beam of light over the mask provides for a frequency variation from 1 per second to 1500 per second."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

603. **Jaensch, E.** *Die Psychologie und die Wandlungen im deutschen Idealismus.* (Psychology and the changes in German idealism.) *Ber. 15. Kongr. dtsh. Ges. Psychol., Jena, 1936, 257-280.*—During the 19th century there was a pre-occupation with material things and a naïve anthropomorphism, based on classical civilizations, which contrasted sharply with the emphasis on the inorganic which characterized science and culminated at the beginning of the 20th century. This schism between materialism and idealism had the effect that the middle portion, life itself, was ignored. Today science occupies itself primarily with this field of inquiry, and thus has succeeded in unifying the cultural pattern. Psychology has an important function in this reorganization, in that it must study the differences between normal and unhealthy cultural systems (which are the creations of normal and unhealthy individuals), the ways in which the spirit of the people may be harmonized with the cultural spirit in which they are living, and the organic structure of this spirit, which must be developed by systematic planning of education. In this way, Germany is preparing the renaissance of mankind by constructing a civilization based on life itself.—*H. Beaumont* (Kentucky).

604. **Jaensch, E.** *Was wird aus dem Werk?* (What is to come from the work?) *Z. Psychol., 1935, 134, 191-218.*—Evaluations from the cultural point of view of the life and work of G. E. Müller, and concerning the fate of psychology.—*G. F. J. Lehner* (Brown).

605. **Jordan, H. J.** *Esprit et matière.* (Spirit and matter.) *Rech. Phil., 1935-1936, 5, 299-320.*—The instincts, which are elementary phylogenetic units, form a sort of base on which the higher psychic functions are erected. The unitary character of the instincts is demonstrated in the fact that the separa-

tion of structures from forms, values and movements is effected according to a necessary process without presenting any logically intelligible relation. The complication of psychic processes leads to a construction of relations, of a rational function which permits the understanding of the relations between the objects by the intervention of consciousness; this process of synthesis is autonomic and follows its own laws. Consciousness is not an epiphenomenon; the function of choice which intervenes in all our non-stereotyped acts is not a simple correlation of relations, carried by the material elements. The objective phenomena should not conceal from us the unity of matter; this in turn leads to the conception of unity as a metaphysical problem.—*G. Goldman* (Sorbonne).

606. Klossowsky, P. *Temps et agressivité. Contribution à l'étude du temps subjectif.* (Time and aggressiveness. Contribution to the study of subjective time.) *Rech. Phil.*, 1935-1936, 5, 100-111.—The human being reproduces on the psychic plane the stages of creation-destruction to which nature is subjected. His natural aggressiveness reaches a state of consciousness when he confronts the external world, where he seeks his object. He finds himself in a crucial position when, instead of obeying the blind need to destroy, he adopts an opposed behavior, that of conservation, which is characteristic of love. In its continual fear of losing its object, the romantic consciousness seeks to expiate its apparent aggression by wishing to suffer. The sadistic consciousness is but the inversion of the romantic, the destructive hope of the present being its specific characteristic.—*G. Goldman* (Sorbonne).

607. Kroh, O. *Georg Elias Müller, ein Nachruf.* (G. E. Müller, in memoriam.) *Z. Psychol.*, 1935, 134, 150-190.—A review of the life and work of G. E. Müller.—*G. F. J. Lehner* (Brown).

608. Kurtz, A. K. *The simultaneous prediction of any number of criteria by the use of a unique set of weights.* *Psychometrika*, 1937, 2, 95-101.—When several criteria are available, it is ordinarily necessary (1) to select one of them as the criterion, (2) to use several and thus arrive at several different sets of weights, or (3) to combine them into a single measure. A formula is derived for the determination of a unique set of weights. The use of these weights will produce the highest possible average coefficient of correlation between the various criteria and two (or more) weighted independent variables. If desired, the criteria may be assigned any predetermined weights. The weights then derived for the independent variables are such that the weighted average of the correlation coefficients between the various criteria and the independent variable composite will be a maximum. In the use of these formulas no assumptions are necessary regarding the interrelationships existing among the criteria, and it is not necessary to compute the intercorrelations among them. A numerical example is included.—(Courtesy *Psychometrika*).

609. Landsberg, P. L. *Maine de Biran et l'anthropologie philosophique.* (Maine de Biran and philosophical anthropology.) *Rev. Psicol. Pedag.*, 1936, 6, 342-368.—Although the importance of Maine de Biran (1766-1824) for modern idealism is realized, it is not appreciated that he was the founder of philosophical anthropology. The anthropological material is found in his *Essais*, published in fragmentary form in 1847. Landsberg traces his progress from egocentrism, through search for personal unity and a point of support above himself, to theocentrism. His original contribution is his discovery, from introspection, that will is the nucleus of human entity. By his search for what is specifically human and man as an entity, he founded a new type of realistic philosophy which introduced modern Western man into philosophy. This philosophy owes its original position to the anthropocentrism and egocentrism of modern man, but it approaches a subjective depth where philosophical anthropology becomes the existential philosophy of theocentrism.—*M. E. Morse* (Baltimore).

610. Lecomte du Noüy, P. *Le temps et la vie.* (Time and life.) Paris: Gallimard, 1936. Pp. 268. Fr. 18.—The author introduces a new concept of time wherein he points out the existence of a fundamental difference between physical time, universal time, and our own inner physiological time. This inner time has a beginning and an end, and it does not appear to flow at a uniform rate with respect to the beginning and end of life. Basing his theory on experimental biological data, the author seeks to formulate an hypothesis regarding the relationship existing between these two times. He believes he can arrive at a determination of physiological time directly through two methods, one of which is based on a study of cicatrization of wounds. Youth and old age live together in the same space, but they go their ways through separate universes in which the value of time is profoundly different.—*M. H. Piéron* (Sorbonne).

611. Menninger, K. A. *The human mind.* New York: Knopf, 1937. Pp. xiv + 504 + xiv. \$5.00.—In this edition the author has enlarged and made more specific the section on treatment. He has made the account of psychoanalysis more comprehensive. Mental hygiene is seen as education in which the principles of psychiatry are applied, and this section has likewise been expanded. A section on the religious applications of psychiatric principles has also been included. This new edition is again divided into 6 chapters: principles, personalities, symptoms, motives, treatments, and applications.—*J. McV. Hunt* (Brown).

612. Offner, F. *The crystograph ink writer.* *Amer. J. Physiol.*, 1937, 119, 381.—"The Crystograph is a pen writing oscillograph actuated by a piezoelectric Rochelle salt crystal element. The frequency response curve is substantially flat from zero to about 180 c. p. s."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

613. **Pepper, S. C.** A convergence theory of similarity. *Phil. Rev.*, N. Y., 1937, 46, 596-608.—The convergence theory of similarity holds that whenever two or more stimulating factors converge upon a single response factor, the stimulating processes are said to be similar. It follows that similarity is relative to the organism making the response. From this ultimate sense of similarity as convergent response, several related senses are developed, including recognitive similarity, instrumental similarity, standardized similarity, and dispersive similarity. A class is a collection of potentially similar objects, and is therefore always a hypothesis. The author attempts to answer several obvious objections to the theory.—*M. F. Martin* (W. Springfield, Mass.).
614. **Plewa, F.** Adler und der Evolutionsgedanke. (Adler and the idea of evolution.) *Int. Z. indiv. Psychol.*, 1937, 15, 142-149.—Adler freed the biology of human beings from one-sided physical determinism. His system is frankly and boldly teleological. The human individual builds his own life upon his evaluation of himself—inferiority feeling, superiority feeling, and community feeling. Adler regarded the concept of the community as the final fulfilment of evolution. It can not be read out of immediate experience. Individual psychology is in part a science of what ought to be. Let no one think that the solution lies at hand. Individual psychology shows where the problem lies and where we may attack it.—*M. F. Martin* (W. Springfield, Mass.).
615. **Reich, W.** Der dialektische Materialismus in der Lebensforschung. (Dialectic materialism in the study of life.) *Abh. personal. Sexualökön.*, 1937, No. 5, 51-62.—Starting with his experiments on bions, which he believes demonstrate the origin of life from inanimate matter, Reich discusses the application of dialectic materialism to biology, Freud's theory of instincts, sociology, and religion. His experiments convince him that organic matter is disrupted by heat into particles which imbibe fluid and become electrically charged, i.e. bions—life as an undifferentiated unity. Bions demonstrate the origins of the sexual and death instincts. The latter is biologically identical with orgasm—release of tension. The orgasmic formula—mechanical tension, electrical charge and discharge, mechanical discharge—is the formula of all vegetative life. Inanimate structures contain the same mechanisms as animate, but only in the latter do they follow the orgasmic sequence. There are two kinds of biology: the conservative, mechanistic, metaphysical; and the dialectic-materialistic, which tries to grasp the flux of life, and is always related to the social life-process. The concepts of God and "divine creation" express irrationally, instinctively, under urgent stress, but correctly the unity of man and nature.—*M. E. Morse* (Baltimore).
616. **Schulhof, H.** Erinnerungen an Alfred Adler. (Memories of Alfred Adler.) *Int. Z. indiv. Psychol.*, 1937, 15, 168-171.—The author recounts her experiences as a patient and then as a pupil of Adler, and tells incidents that illustrate his insight, friendly warmth, tact, and wisdom.—*M. F. Martin* (W. Springfield, Mass.).
617. **Sicher, L.** Adlers Bedeutung für die medizinische Psychologie. (Adler's significance for medical psychology.) *Int. Z. indiv. Psychol.*, 1937, 15, 128-133.—In 1907 Adler was still a pure scientist, attributing neuroses and psychoses to the inferiority of organs, but his recognition of the role of central compensation was the first step toward an understanding of the connection between bodily and mental processes and toward the teleological outlook which distinguishes individual psychology from all other systems today. Adler eventually saw neurosis no longer as a disease sui generis but as a social aberration. The neurotic no longer appeared as a poor sick man, fatalistically sacrificed to his heredity or his environment or his drives. Adler showed that every neurosis arises from the attempt of the individual to shirk responsibility and build an illusion of greater personal glory. He taught his patients to see themselves as they were but also as they might be. He taught them courage. He taught his co-workers not to judge or to pity but to respect the human being behind the sickness.—*M. F. Martin* (W. Springfield, Mass.).
618. **Skaggs, E. B.** Elementary principles of psychology. Ann Arbor, Michigan: Edwards, 1937. Pp. vi + 271. \$1.65.—This book is an introductory psychology text written "for the average university sophomore." It contains 31 chapters, each on one general topic or principle. There is a short bibliography following each chapter and a classified list of references in Appendix A. Also in appendix form is additional material on a "system" of psychology, nature of nerve impulse, the principle of use, theories of motivation and personality organization, classification of mental disorders, experimental neurosis, and theories of emotion. Chapters II, XIII, XIV, and XVI have been written by colleagues of the author at Wayne University.—*F. G. Allen* (Brown).
619. **Smith, F. O.** Outline and workbook for general psychology. New York: Prentice-Hall, 1937. Pp. viii + 184. \$1.75.—This workbook represents the major viewpoints of general psychology as represented in the leading textbooks in the field. The author has selected 12 textbooks representative of the subject from the introspective, behavioristic, physiological, experimental, Gestalt, and Freudian points of view. Optional references may be added to this list. Following the outline for each chapter are a number of objective tests and a question and answer exercise. Space is provided for the recording of class experiments and demonstrations.—*M. Keller* (Brown).
620. **Stuart, H. W.** Knowledge and self-consciousness. *Phil. Rev.*, N. Y., 1937, 46, 609-643.—Epistemological monism in its neo-realist form renders error inexplicable. Actual immediacy as a mode of experience in which man is aware of no division between himself and the world is a phenomenon far older than epistemology, but such immediacy is not knowledge. At the level of per-

fect response we have automatism. Knowledge is a view or field of fact from which irrelevance and misleading appearance have fallen away. Lifted out of perplexity and vacillation, one is elated. Elation is what gives to a complex whole of empirical content its status as knowledge. Elation is not proof, but when proof, by whatever standard, is complete, elation supervenes. The real world is not automatically self-revealing. Without a sense of our disability and our need for fuller knowledge, its presence over against us as a realistic world would remain forever unsuspected. The intending knower, confronted by a problem, asks questions which he finds himself unable to answer. Attention is operative, not contemplative. It is untrue that our common experience of the world is an experience of physical objects. Neither is it psychical. It is neutral. It is man's sense of indeterminate possibility that gives point to his questionings.—*M. F. Martin* (W. Springfield, Mass.).

NERVOUS SYSTEM

621. Ades, H. W., Mettler, F. A., & Culler, E. A. Distribution of acoustic pathways in the medial geniculate bodies. *Amer. J. Physiol.*, 1937, 119, 257-258.—"Limens of auditory acuity for pure tones are obtained in cats by the conditioned-response technique. Tests are made on the seven frequencies representing the octaves from 125 cycles to 8000 cycles. By means of the Horsley-Clarke stereotaxic instrument, localized electrolytic lesions are made bilaterally (symmetrically) in the medial geniculate bodies. Modifications of the usual technique of the Horsley-Clarke instrument are necessary. . . . Preliminary results thus indicate the following points: (1) destruction of one medial geniculate body causes a general loss in acuity, comparable to that resulting from the destruction of one hemicortex or one cochlea; (2) localized bilateral lesions affect certain frequencies more than others, giving evidence that the several frequencies traverse the geniculates by different pathways. Precise location of the areas involved in specific lesions cannot yet be stated, pending complete histological examination."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

622. Barrera, S. E., & Ferraro, A. The effects of lesions of various parts of the vestibular system in *Macacus rhesus*. *Amer. J. Physiol.*, 1937, 119, 266.—"Our experiments demonstrate that various elements in this vestibular dysfunction symptom complex may be elicited by lesions of any of the structural components of the vestibular system (labyrinth, eighth nerve, various vestibular nuclei, vestibulo-cerebellar connections, and posterior longitudinal bundle). The specific characteristics and the individual variations in intensity and direction of some of the phenomena were found to be related to the particular structures or connections involved in the lesions."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

623. Belniak, L. J., & Ets, H. N. The effects of magnesium on the production of acetylcholine by motor nerve stimulation. *Amer. J. Physiol.*, 1937, 119, 270.—"Dale, Feldberg and Vogt have shown that acetylcholine is liberated at the endings of a stimulated motor nerve in the cat, and that curare does not prevent this effect. Using the perfused tongue of the dog, we have confirmed this finding. . . . The initial resting samples showed no acetylcholine (except a trace in one experiment out of nine). The concentration is highest during and immediately after stimulation, progressively diminishing thereafter. So far as quantitative comparison is possible, the amount of acetylcholine recovered in the magnesium experiments seems at least as great as in the normal controls."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

624. Blood, R. Defective development of the cerebellum in the dog. *Amer. J. Physiol.*, 1937, 119, 274.—"This defective development affected the cerebellum alone, the cerebrum being normal. The defect lay in complete absence of the lobus anterior, reduction and distortion of the lobi simplex and ansiformis, flocculus and paraflocculus, and definite deficiency of the lobus medianus posterior. These defects are more pronounced on the left side. The moving pictures show asthenia on the left side and a marked tendency of the dog to fall to the left, as compared with a litter mate."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

625. Boyd, T. E., & Hillenbrand, C. J. Reflex effects from brief stimulation of the vagus at different stages of the respiratory cycle. *Amer. J. Physiol.*, 1937, 119, 274-275.—"Using dogs under fairly deep anesthesia (barbital-sodium) and with both vagi sectioned, we have applied brief stimuli to the central stump of one vagus. The shocks were just threshold for fibers inhibiting inspiration, and the number of volleys just sufficient to cut short an inspiration at whatever stage desired. The frequency was 120 per second. Expiration promptly follows the application of such a stimulus, and the ensuing expiratory pause is shortened. The earlier an inspiration is inhibited, the shorter is the interval before the beginning of the next. The reflex effect is limited to one cycle. There is no visible effect unless the stimuli are timed immediately before or during inspiration. . . . When similar or even longer periods of stimulation are applied to the superior laryngeal nerve, an inspiration in progress is merely suspended, to be completed after the stimulus is over."—*T. W. Forbes* (Harvard Bureau of Traffic Research).

626. Bronk, D. W., & Larrabee, M. G. The effects of activity and altered circulation on ganglionic transmission. *Amer. J. Physiol.*, 1937, 119, 279.—"In a circulated ganglion submaximal preganglionic stimulation at a frequency of 5 to 10 a second produces a discharge of postganglionic volleys with a corresponding frequency and of a constant size. Ten to fifteen minutes after the circulation has been stopped similar stimulation produces a

series of postganglionic responses which progressively increase in size until they become 4 or 5 times as large as the initial volley of the series. . . . Here is evidence for long-lasting facilitation in non-circulated ganglia. When the preganglionic nerve is stimulated at a frequency of 30 or more a second the postganglionic spike potential rapidly decreases in size. Following a period of such stimulation a condition develops which causes more ganglion cells to respond to a given stimulus. This reaches a maximum after some seconds when the postganglionic response may be 4 to 6 times as great as a test response preceding the period of activity. This effect is more marked in a ganglion without circulation. The postganglionic response to a single preganglionic test volley has been recorded before and after a train of antidromic impulses. For several seconds after the last antidromic impulse a larger number of ganglion cells respond to the preganglionic volley. This suggests that some of the long-lasting effects which increase the ganglionic response are associated with altered properties of the ganglion cells themselves."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

627. Brookhart, J. M., Steffensen, E. H., & Gessell, R. Localized faradic stimulation of the medulla oblongata and its effects upon breathing. *Amer. J. Physiol.*, 1937, 119, 280.—"Needle electrodes bare at the tips and separated 1 mm. were directed to miscellaneous points in the brain stem and brief localized faradic stimulations applied. . . . Further data are considered essential for interpretations."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

628. Brown, G. L. Transmission at nerve endings by acetylcholine. *Physiol. Rev.*, 1937, 17, 485-513.—Following a description of the nerve fiber systems in which acetylcholine may be the transmitting agent, the two types of acetylcholine transmission (muscarine- and nicotine-like) are discussed.—*M. A. Rubin* (Worcester State Hospital).

629. Bucy, P. C. The effect of anterior cordotomy on spasticity of the skeletal muscles in man. *Amer. J. Physiol.*, 1937, 119, 282.—"Immediately following section of one antero-medial column there was some reduction in spasticity in both lower extremities. This did not persist, however, and the pre-operative condition soon obtained. Section of both antero-medial columns also failed to produce any persistent change."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

630. Cannon, W. B., & Rosenbluth, A. The transmission of impulses through a sympathetic ganglion. *Amer. J. Physiol.*, 1937, 119, 221-235.—A number of striking resemblances between motor end plates of skeletal muscle and cell bodies in sympathetic ganglia are pointed out. The question investigated here is whether sympathetic ganglion cells show effects similar to these motor end plates from tetanic stimulation, from prostigmin, and from curare. The superior cervical ganglion of cats was used under dial anesthesia with atropin applied to overcome unfavorable effects of eserine or prostigmin.

Normal blood supply was maintained. General results were found to be remarkably similar to effects from motor end plates. Prostigmin may depress the ganglion cell activity but may potentiate response to a maximal single preganglionic shock. Prostigmin before tetanic stimulation cut short contraction, producing relaxation which later wore off (interpreted as due to preservation of acetylcholine by the prostigmin). After tetanus had produced fatigue prostigmin increased contraction. Injection of acetylcholine during a similar phase produced a similar effect. Either acetylcholine or prostigmin gave a decurarizing effect. If it is assumed that curare raises the threshold, the effect of acetylcholine or prostigmin can be explained as overcoming this increase of threshold. It is held that the results give further evidence for the chemical mediator theory and overcome the criticism that certain previous work was done in the absence of normal blood supply. The evidence for a supraliminal value of acetylcholine is held to be important.—*T. W. Forbes* (Harvard Bureau for Traffic Research).

631. Chweitzer, A., Geblewicz, E., & Liberson, W. Action de la mescaline sur les ondes α (rythme de Berger) chez l'homme. (The action of mescaline on the α waves, the Berger rhythm, in man.) *C. R. Soc. Biol., Paris*, 1937, 124, 1296-1299.—Mescaline, when given in proper doses, produces visual hallucinations and states of consciousness which resemble those found at the beginning of schizophrenia. The authors found that mescaline intoxication produces a reduction in the amplitude of the α waves and an increase in the silent periods in the encephalogram, the effect persisting for several days.—*M. H. Piéron* (Sorbonne).

632. Davis, H., Davis, P. A., Loomis, A. L., Harvey, E. N., & Hobart, G. Changes in human brain potentials during the onset of sleep. *Science*, 1937, 86, 448-450.—Five stages of brain potential change have been described. This investigation is concerned with two of these, namely: the alpha, or normal waking rhythm, and low voltage, the losing of the alpha rhythm. What occurs when the individual is about to fall asleep as indicated by these stages is the subject of this paper. It is found that there is an intermediate drowsy or "floating" state indicated by low voltage and loss of alpha rhythm, followed by another period of low voltage with delta waves. These periods are succeeded by a third showing spindles and moderate delta waves, which indicates real sleep.—*F. A. Mote, Jr.* (Brown).

633. Dusser de Barenne, J. G. Sensori-motor cortex and thalamus opticus. *Amer. J. Physiol.*, 1937, 119, 265.—"The sensory or sensori-motor cortex of the monkey occupies a large region of the pre- and postcentral cortex and is subdivided into three major subdivisions, a leg-, an arm-, and a face area. Local strychninization of a minute area of the cortex of any of these subdivisions, either in the precentral or postcentral portion, induces a marked hyperactivity of the corresponding thalamic nucleus

or nuclei, evidenced by typical changes in the electrothalamogram."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

634. Eccles, J. C. Synaptic and neuro-muscular transmission. *Physiol. Rev.*, 1937, 17, 538-556.—Transmitters of nerve impulses at synaptic and neuro-muscular junctions are divided into two types, those of long duration and those of short duration. The long duration transmitters are probably chemical in nature (i.e. acetylcholine, adrenaline, etc.), whereas short duration transmission is probably not chemical.—*M. A. Rubin* (Worcester State Hospital).

635. Ectors, L. Stimulation of the hypothalamus in chronic hemidecorticated monkeys. *Amer. J. Physiol.*, 1937, 119, 301-302.—"Using the Horsley-Clarke stereotaxic apparatus, the hypothalamic region has been stimulated in normal and in hemidecorticated monkeys. Faradic current and condenser discharges at a rate of 2 to 10 per second have been used for excitation. In normal monkeys tracts for pupil dilatation, increased blood pressure, increased respiration were followed from the supra-optic region down to the posterior end of the mesencephalon both in the median and lateral hypothalamus. In the anterior hypothalamus the increased respiration was mainly an increase in amplitude; in the posterior hypothalamus it was chiefly an increase in frequency with long after-effect (panting). The stimulation of the posterior hypothalamus gave running and struggling movements. Complete unilateral removal of the cortex was successfully carried out in eight monkeys. . . . Stimulation of the pyramidal system on the decorticated side gave no response."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

636. Forbes, A., Renshaw, B., & Rempel, B. Units of electrical activity in the cerebral cortex. *Amer. J. Physiol.*, 1937, 119, 309-310.—Micro-electrodes were used on cat cortex. Waves of 40 millisecond duration suggested organized groups of neurons or single cells. The greatest source of potential appeared to be from 0.5 mm. to 2 mm. below the surface, while a separation of electrodes of 0.1 to 0.2 mm. gave as large amplitude as greater separation.—*T. W. Forbes* (Harvard Bureau for Traffic Research).

637. Gasser, H. S. Responses of nerve to two trains of rhythmic stimuli. *Amer. J. Physiol.*, 1937, 119, 315-316.—"If a mammalian nerve is stimulated with a train of near-threshold shocks 50 msec. apart and a second train of stronger shocks at the same frequency is applied intercurrently at another electrode, so that the shocks of the latter fall halfway between the shocks of the former, most of the fibers start to follow the second series and cease responding to the first. . . . The exclusion of one train by the other is most striking if the subnormality is exaggerated by rendering the nerve somewhat more alkaline than normal. . . . The taking over of the responses from one train by the other offers a suggestion concerning the possible mechanism of

reciprocal innervation. Transmission in the nervous system is effected by local summation of impulses at synapses. Let us consider an internuncial neurone common to both a flexor and an extensor arc, but receiving more nerve endings from the latter. During flexion this neurone would discharge simultaneously with other neurones on flexor motor neurones; but during extension it would be taken over into the group of internuncial neurones discharging upon extensor motor neurones, because of the dominant effect of the endings derived from the extensor arcs. The simultaneous discharge on the flexor motor neurones would be ineffective because out of time with the flexor circuits."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

638. Gibbs, F. A. Regulation of frequency in the cerebral cortex. *Amer. J. Physiol.*, 1937, 119, 317-318.—"The frequency of the fluctuations in potential which occur in the cerebral cortex is controlled, as is the frequency of respiratory movements and of heart rate, by the antagonistic action of rate accelerators and rate depressors. In general, the factors which tend to increase the rate of the respiratory center, as judged by increased frequency of respiratory movements, also increase the frequency of cortical potential fluctuations. In general, factors which tend to decrease the frequency of respiratory movements tend to decrease the frequency of cortical potentials. . . . Measures which correct disturbances of respiratory rate tend to correct and prevent the comparable disturbances in cortical frequency which occur in epilepsy. Conditions which cause sudden changes in rate precipitate epileptic seizures. Because certain cell masses tend to 'beat' at a characteristic frequency, frequency can have localizing significance in the nervous system. Slower frequencies modulate faster frequencies. The brain presents possibilities for almost infinite modulation."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

639. Gilson, A. S., Jr. A unified concept of the mode of vagal cardio-inhibition. *Amer. J. Physiol.*, 1937, 119, 318.—"The functional manifestations of vagal inhibition of the heart are such as would appear if critical recovery processes were slowed by the vagal action. An extension of this concept assumes that vagal effect results in the inactivation of a substance, the concentration of which determines the rate of recovery from a preceding discharge."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

640. Hare, K. Degeneration of the supra-optic nucleus following hypophysectomy in the dog. *Amer. J. Physiol.*, 1937, 119, 326-327.—"Serial sections were made of the diencephalon of each of 10 dogs which lived from 25 to 233 days after removal of the pituitary. Microscopic examination revealed pronounced degeneration in the supra-optic nuclei in all cases. Although more than half its cells had disappeared, the rostral portion of the nucleus suffered least. The caudal parts of the nucleus had wholly disappeared or consisted of very few

cells. The death of these neurons was not the result of infarcts involving the chiasmal region, nor is it likely that direct trauma to the nerve cell bodies was responsible, for neurons much nearer the lesion were spared. It is believed that their destruction was brought about by the removal of their processes passing into the pars nervosa of the pituitary."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

641. **Harris, A. S.** Specific reflex afferents in mammalian plantar nerves. *Amer. J. Physiol.*, 1937, 119, 326-327.—"Faradic stimulation of low threshold cutaneous fibers in the medial plantar nerve or the superficial branch of the lateral plantar of the reflex dog gives rise to a response pattern of ipsilateral extension consisting of contraction of extensor muscles and the plantar flexors of the limb. The response has occurred in all animals studied without exception. . . . The decerebrate, spinal, and nembutilized animals responded qualitatively alike. Attempts to elicit ipsilateral extension responses from the main trunk of the lateral plantar nerve have been unsuccessful. The nerves yielding the ipsilateral extensor response are distributed almost entirely to the skin of the planta including the pads and the skin between them."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

642. **Harris, A. S.** Quick and delayed reflex responses evoked from depressed mammalian nerve. *Amer. J. Physiol.*, 1937, 119, 327-328.—"Experiments with aseptically decerebrated dogs were continued over periods up to five days. A stretch of tibial nerve 6 or 7 cm. long was dissected free and sectioned at the distal end. It was kept moist with Locke's solution and the whole wound sterilized with chlorazene. During the first day reflex responses evoked by stimulating the nerve were of the classical flexion type, but during the second and third day modifications occurred causing upon effective stimulation unusual reactions. Irritability was depressed in the distal part of the free nerve so that no response to thyatron shocks of 0.2 ms. duration appeared. Galvanic stimuli evoked reflex responses with a latency of 600 to 800 ms. in which flexors and extensors of the same limb ordinarily contracted simultaneously. Galvanic stimuli applied to a more proximal, less depressed part of the nerve evoked both the quick flexion reflex with extensor inhibition and the delayed response described above. . . . The nerve fibers which evoke the delayed reflex which appears 'diffuse' or incoordinate have not been identified oscillographically, but it appears probable that the depression is of the type caused by asphyxia, in which the large fibers fail first and the small ones last. This suggests that it is the smallest or C afferent group that evoked the delayed response."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

643. **Hartline, H. K.** The discharge of impulses in the optic nerve fibers of the eye of *Pecten irradians*. *Amer. J. Physiol.*, 1937, 119, 328.—"The discharge of impulses in the optic nerve fibers of the eye of the scallop has been studied by recording their amplified action potentials. In the whole

optic nerve the response to illuminating the eye is strongest at the onset of illumination, diminishes distinctly after several seconds, but nevertheless continues as long as the light shines. When the light is turned off there is another strong outburst of nerve impulses, lasting several seconds. The *Pecten* retina contains two distinct layers of sensory cells each giving rise to a separate branch of the optic nerve. . . . Impulses are discharged in the fibers from the proximal sensory cells only when the eye is illuminated. They cease when the light is turned off. . . . Impulses are discharged in the fibers from the distal sensory cells only in response to cessation of illumination. This discharge may last many seconds; it is abruptly stopped if the eye be re-illuminated."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

644. **Hettwer, J. P.** Relation of threshold of excitability of nerve to carbon dioxide tension. *Amer. J. Physiol.*, 1937, 119, 335.—"The effect of carbon dioxide at various tensions approximately within physiological limits on the minimal and maximal action potential threshold of frog sciatic nerve is graphically explored. Apparatus employed includes an amplifier feeding to a string galvanometer and condensers for stimulation. Results show a progressively increasing rise of both thresholds with increasing tensions of carbon dioxide applied either to the whole nerve or around the stimulating electrodes only."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

645. **Howe, H. A., & Clark, D. A.** Fiber action potentials in the spinal cord of the cat. *Amer. J. Physiol.*, 1937, 119, 567-573.—"The two pyramidal tracts on the ventral surface of the medulla were exposed at about the level of the seventh nerve by a ventral approach through the neck. A trephine hole was made in the bone between the auditory bullae. A bipolar silver electrode mounted in a bakelite rod was screwed into the hole and held in contact with the tracts to be observed. Leads from the cord were taken off by means of co-axial needle electrodes through the cervical vertebrae. The potentials showed a general form similar to the classical A spike of peripheral nerve. The differential effect of asphyxia indicated that the first negative complex was less susceptible than the second, and therefore represented presynaptic fibers. Conduction time also pointed to presynaptic fibers. It was not possible to bring in any individual group alone as can be done in peripheral nerve. It is concluded that the potential picture represents a complex of the activity of many pathways."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

646. **Jefferson, G.** Removal of right or left frontal lobes in man. *Brit. med. J.*, 1937, Part 2, 199-206.—"Those of the eight patients discussed who showed no mental alteration before operation were unaffected by partial removal of the frontal lobe; those who had mental symptoms were much better after the lobe had been excised. In no case was there evidence of a lateral dominance. In general the

author holds the view that the volume of tissue removed is more significant in causing defect in behavior than locus of ablation, and that "frontal changes" are most pronounced when the lesion is bilateral, when it is invasive, when intracranial pressure is high, or in combinations of these conditions.—W. J. Brogden (Johns Hopkins).

647. **Kabat, H.** An analysis of cardio-accelerator fibers in the vago-sympathetic trunk of the dog. *Amer. J. Physiol.*, 1937, 119, 345-346.—"Stimulation of the dog's vago-sympathetic nerve after atropine causes acceleration of the heart. Experiments were carried out to determine whether the accelerator fibers are true vagus fibers or sympathetic fibers that join the nerve in the neck. In dogs under chloralose anesthesia, cardiac acceleration was never observed in response to stimulation of the vagus rootlets intracranially. . . . In other experiments, the spinal cord was cut at C2, atropine administered and the dog maintained by artificial respiration. Stimulation of the bulbar accessory or vagus rootlets intracranially, even with a strong faradic current, had no effect on the heart rate. . . . It appears, therefore, that the acceleration resulting from stimulation of the vago-sympathetic trunk after atropine is dependent largely, if not entirely, on the sympathetic cardiac nerves which run in the trunk. If any true vagal accelerator fibers are present, they play no significant part in reflex adjustment of the heart rate."—T. W. Forbes (Harvard Bureau for Traffic Research).

648. **Keller, A. D., Chase, W. P., & Roy, R. S.** Hemi-ablation of the cerebellum in the monkey without irregularity in voluntary muscular movement. *Amer. J. Physiol.*, 1937, 119, 348-349.—"Unilateral decerebellization was accomplished by the simultaneous extirpation of the whole of the vermis and the left lateral lobe. The cortex of the right lateral lobe with its underlying lateral cerebellar nuclei and the right brachium conjunctivum remained intact. During the acute stage following operation there was present a postural deficit characterized by an impairment of balance and awkwardness in movements of progression. In the final state, balance seemed unimpaired. It was suspected, however, that in progression there remained a slight lack of smoothness—tendency to cerebellar gait—in muscular movement. The lack of asymmetry, in such a preparation, either during the acute or final state is evidence that this deficit is due to ablation of the vermis alone. This was also verified by extirpation of the vermis leaving both lateral lobes intact. The vermal cortex seems not involved. . . . It is, therefore, evident that the cerebellum, in its entirety, is not essential for the ordinary coordination of voluntary muscular movement nor for muscular stability when at rest or during movement."—T. W. Forbes (Harvard Bureau for Traffic Research).

649. **Kennard, M. A., & Ectors, L.** Forced circling movements in monkeys following lesions of the frontal lobe. *Amer. J. Physiol.*, 1937, 119, 350.—"In monkeys forced rotatory movements occur only

in animals which show turning of the head and conjugate deviation of the eyes toward the side of the lesion. Extirpation of an area in the mesial frontal convolution in the region of the superior limb of the arcuate sulcus (including part of area 8) gives rise to these adverse postures. Following unilateral lesions the duration of the head and eye turning is transitory, lasting only a few weeks, but circling may occur for several months thereafter. Extirpation of the occipital lobe or of the motor face area is not followed by circling movements, nor are extirpations of any or all other areas of the frontal lobe, provided this small region remains intact."—T. W. Forbes (Harvard Bureau for Traffic Research).

650. **King, C. E.** The effect of double vagotomy and carotid sinus denervation on the reaction of barbitalized dogs to hyperventilation. *Amer. J. Physiol.*, 1937, 119, 350-351.—"Our results fall in line with the concept that receptors in the region of the carotid sinuses are of prime importance in the respiratory reactions to chemical changes in the blood, in particular those associated with anoxemia."—T. W. Forbes (Harvard Bureau for Traffic Research).

651. **Klüver, H., & Bucy, P. C.** "Psychic blindness" and other symptoms following bilateral temporal lobectomy in Rhesus monkeys. *Amer. J. Physiol.*, 1937, 119, 352-353.—"In connection with a study of hallucination-producing drugs the temporal lobes of an adult Rhesus monkey were removed in two stages. Up to the present (4 weeks after removal of the second lobe) the following symptoms can be observed: The animal does not exhibit the reactions generally associated with anger and fear. It approaches humans and animals, animate as well as inanimate objects without hesitation, and although there are no motor defects, tends to examine them by mouth rather than by the use of the hands. There is a general slowing down of movements; the quick, jerky movements characteristic of the normal Rhesus monkey have almost entirely disappeared. Various tests do not show any impairment in visual acuity or in the ability to localize visually the position of objects in space. However, the monkey seems to be unable to recognize objects by the sense of sight. . . . These symptoms of what appears to be 'psychic blindness' are not present in four other monkeys which are being studied at present and in which only one temporal lobe has been removed. However, these cases seem to respond less easily and less strongly to a variety of stimuli which in monkeys with one or both frontal, parietal or occipital lobes extirpated or in normal monkeys call forth extreme excitement as evidenced by motor or vocal behavior."—T. W. Forbes (Harvard Bureau for Traffic Research).

652. **Konheim, B. G.** An analysis of the afferent and efferent motor mechanism in the frog by longitudinal and transverse sections at various levels of the encephalon. *Amer. J. Physiol.*, 1937, 119, 356.—"Results. Diencephalic longitudinal split. Effect on movement slight. Some loss of

spontaneity in movement. Changes direction frequently in jumping so that little distance is covered. Diencephalic transverse section at extreme caudal border—bilateral. No response to visual stimuli. No normal response to vestibular stimulation. Keeps head lowered when disturbed. Some spontaneous movement shown but slow and indecisive. Diencephalic transverse section at extreme rostral border—bilateral. Movements slower, less spontaneous and animal quieter. Mesencephalic longitudinal split. No noticeable effect on movement. Cerebellar extirpation. Vestibular responses normal. Tendency to exhibit hyperextension of legs with a rigid position of arms and wide flinging of legs. Rhombencephalic longitudinal split in rostral half of medulla. Some or all vestibular response lost depending on extent of cut. Righting reflexes poor particularly in water, legs hyperextended and flung sideways in jumping. In some cases arms overextend lateralward swung too high in 'walking' or buckle under body as if some sensory disturbance were present."—T. W. Forbes (Harvard Bureau for Traffic Research).

653. Larrabee, M. G., & Hendrix, J. P. After-discharge in the central nervous system in response to electrical stimulation of the cerebral cortex. *Amer. J. Physiol.*, 1937, 119, 358.—"It has been shown that repetitive electric shocks applied to the cerebral cortex of the anesthetized rabbit, cat, or monkey are capable of initiating activity in cortical neurones which outlasts the period of stimulation. . . . We have produced this type of after-discharge by stimulating the suprasylvian gyrus of the cat's cerebral cortex for several seconds with strong electric shocks at a frequency of twenty or more per second. This self-maintained activity has several interesting features: (1) The after-discharge spreads widely through the central nervous system. It can be recorded from the contralateral as well as the ipsilateral cerebral cortex and from the cerebellar cortex. (2) The activity sometimes continues for more than two minutes after the end of stimulation. (3) The discharge is often organized into very simple patterns, as also observed by Adrian. When recorded through concentric electrodes three millimeters in outside diameter placed on the surface of the cortex one to three centimeters from the stimulating electrodes the after-discharge consists most typically of regularly spaced sharp spikes at frequencies of twenty to two per second."—T. W. Forbes (Harvard Bureau for Traffic Research).

654. Laugier, H., & Liberson, W. Contribution à l'étude de l'électroencéphalogramme humain. (A contribution to the study of the human electroencephalogram.) *C. R. Soc. Biol., Paris*, 1937, 125, 13-17.—According to Berger the waves registered on the brain surface arise from all the cortical regions, while Adrian and Matthews believe that the Berger rhythm originates in the occipital cortex. From their research the authors believe that the origin of the oscillograms registered from occipital sources differs from that from bitemporal sources. They have found subjects for whom the bitemporal oscillogram was much greater than the occipital oscillogram, even though the latter was taken while the subject had his eyes closed. They assume that the residual electroencephalogram pictures an activity which is analogous to that manifested by the bitemporal oscillogram.—M. H. Piéron (Sorbonne).

655. Lawson, H., & Leigh, A. M., Jr. The influence of the inferior mesenteric ganglion on the mechanical excitability of the dog's colon. *Amer. J. Physiol.*, 1937, 119, 359.—"Segments in the caudal half of the colon responded to distention typically with an initial period of relaxation during which all contractions were suppressed, lasting from one to five minutes. . . . After subsequent division of the hypogastric and lumbar colonic nerves the secondary tonus waves appearing during the excitatory period were still further slowed. . . . The data offer further evidence for automaticity in the decentralized ganglion, and suggest as a primary function an acceleration of the secondary tonus rhythm of the caudal segments of the colon."—T. W. Forbes (Harvard Bureau for Traffic Research).

656. Levetzow, K. G. v. Beiträge zur Reizphysiologie der polycladen Strudelwürmer. (Contributions to the sensory physiology of the polyclad Turbellaria.) *Z. vergl. Physiol.*, 1936, 23, 721-726.—This is an analytical study of the neural control of turbellarian locomotion. Gliding through ciliary action is peripherally innervated and controlled; progression through waves of muscular contraction (i.e. creeping) is innervated solely through peripheral nerve plexi, as shown by tests with body sections cut in various shapes. Brain conduction is essential for more complex swimming and creeping, and for responses, such as righting, in which the anterior end is first to be active. Ditaxic locomotion disappears in decerebrate *Leptoplana*, and decerebrate *Cryptocelis* no longer burrow in the sand. Since lateral deviations of the anterior end are largely absent in decerebrate specimens, the worms come to rest against obstacles, and orientation under changing stimulation cannot be very effectively produced. Brain function may be artificially replaced to a limited extent, since decerebrate turbellarians may exhibit coordinated progression movements in response to localized mechanical or visual stimuli. Chemical stimuli are too diffuse to be thus effective. In decerebrate *Stylochus*, creeping may be aroused by adding NaCl-CaCl₂ to the medium, but swimming cannot be produced in this way. Appropriate stimulation of exposed nerve strands may cause a protracted locomotion in decerebrate *Leptoplana*.—T. C. Schneirla (New York University).

657. Longmire, W. P., Jr. The central control of postural reactions in the lizard. *Amer. J. Physiol.*, 1937, 119, 362.—"Posture remained essentially normal after removal of the telencephalon and anterior portion of the mesencephalon. Transactions immediately anterior to the red nuclei, however, produced hypertonicity in the most frequently used antigravity muscles of the neck, back and forelegs,

yielding, as respects these muscles, a posture resembling decerebrate rigidity. The hindlegs, which are normally less frequently employed by this animal in antigravity functions, were not involved. Unilateral destruction of the red nucleus caused disappearance of the rigidity contralaterally; bilateral destruction produced a flaccid preparation, which showed slight temporary extension of the extremities only during progression. Animals with more caudal ablations involving the anterior portion of Deiters' nuclei developed at the onset of progression a hyperextension of all four legs. This increased with continuance of locomotion. The placing and hopping reactions seen in higher forms were represented by a single stereotyped response elicitable only on proprioceptive stimulation, the central control of which apparently lies in the posterior medulla."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

658. Magoun, H. W., Ranson, S. W., & Hetherington, A. The liberation of adrenin and sympathin induced by stimulation of the hypothalamus. *Amer. J. Physiol.*, 1937, 119, 615-622.—In order to demonstrate sympathin production, the nictitating membrane was denervated and sensitized by denervation of the cervical sympathetic ganglion chronically in the fashion used by Cannon. To demonstrate the release of adrenin the n.m. was acutely denervated. Stimulation of the hypothalamus was accomplished with the Horsley-Clarke apparatus in adrenalectomized animals. Sympathin response occurred with a latency of 20 to 35 seconds and a duration of 2 to 10 minutes. Adrenin reactions occurred with a latency of from 15 to 30 seconds and a duration of 4 or more minutes. The latter, as well as blood pressure reactions, were eliminated by adrenalectomy. The study thus demonstrated that, besides the direct nervous effects from hypothalamic stimulation, there is a release of hormones. It is suggested that the hormones are responsible for the slow decline of a hypothalamic response such as hypertension.—*T. W. Forbes* (Harvard Bureau for Traffic Research).

659. Marshall, W. H., Woolsey, C. N., & Bard, P. Representation of tactile sensibility in the monkey's cortex as indicated by cortical potentials. *Amer. J. Physiol.*, 1937, 119, 372-373.—"Discrete tactile stimulation of a restricted cutaneous area produces in the cortex of the anesthetized monkey a well localized surface positive wave. Applying this fact, we have mapped the contralateral representation of tactile sensibility over areas 3, 1 and 2. Only the face has shown bilateral representation. Foci are similar in relative position and extent to motor points for corresponding parts. Different surfaces of a part are represented separately. Thus the ventral aspect of the leg appears in orderly sequence on the medial cortical surface between genitalia, at sulcus cinguli, and toe V, at hemispherical rim; the dorsal aspect is represented on the dorsal surface between toe I and trunk."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

660. McCulloch, W. S. On the nature and distribution of factors for facilitation and extinction in the central nervous system. *Amer. J. Physiol.*, 1937, 119, 363-364.—"Comparison of the motor responses with the electrical alterations of cerebral cortex and cord induced by repeated electrical stimulation of the motor cortex show two factors for facilitation and two for extinction. There is negative afterpotential with decreased threshold (facilitating), followed by positive afterpotential with increased threshold (extinguishing), both maximal at site of stimulation. There is electrical afterdischarge, hyperactivity in reverberating chains (facilitating) followed by deficiency of spontaneous action potentials, hypoactivity (extinguishing), both demonstrable in structures functionally related to the focus stimulated. . . . The spatial separation is not absolute. All four factors can be demonstrated electrically at the site of stimulation. By setting up subthreshold background stimulation of five pulses per second and, through the same electrodes, superimposing short periods of stimulation of high pattern and pulse frequency, it is possible to demonstrate the influence of all four factors, and arrive at some conclusions as to their significance."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

661. Mollaret, P. Interprétation du fonctionnement du système nerveux par la notion de subordination (subordination et posture). (Interpretation of the functioning of the nervous system through the concept of subordination; subordination and posture.) Paris: Masson, 1937. Pp. 440. Fr. 60.—Subordination is the modification of the functional capacity of a neuron by the action of another neuron. The author endeavors to outline the present status of the question by gathering together the most significant data on the subject. In the four sections of the book the following subjects are discussed: the idea of chronaxy, with its measurement and laws; the question of subordination; the modalities of subordination at different levels in the nervous system; and the relationships between subordination and posture. A bibliography of 550 titles relating to chronaxy completes the volume.—*M. H. Piéron* (Sorbonne).

662. Nicholson, H. C., & Sobin, S. Alterations in breathing from local chemical applications to the floor of the fourth ventricle. *Amer. J. Physiol.*, 1937, 119, 380.—"If intratracheal carbon dioxide caused an extreme acceleration local application of carbon dioxide to the floor of the fourth ventricle usually caused a slight acceleration. Lowering the temperature of the Locke's solution a few degrees below body temperature rendered marked slowing less apt to occur. The latent period of these effects was extremely brief. Placing a drop of a 1% nicotine solution on the floor of the fourth ventricle in the region of the calamus scriptorius caused a transient slowing of respiration. This was usually initiated by an apnea which might last a minute. This slowing usually completely disappeared within ten minutes. If 5% nicotine was used the initial slowing

was usually followed in from one to four minutes by prolonged acceleration."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

663. Olnjanskaja, R. P. *Der Einfluss der Grosshirnrinde auf den Gaswechsel.* (The influence of the cerebral cortex on gas exchange.) *Arbeitsphysiologie*, 1937, 9, 528-545.—*R. R. Willoughby* (Brown).

664. Pike, F. H. Motor effects of median longitudinal incision of the decussations of the medial lemniscus and corticospinal tracts in the cat. *Amer. J. Physiol.*, 1937, 119, 384.—"Medial longitudinal incision of the lower portion of the medulla, presumably including pyramidal and lemniscus decussations, gives rise to results, immediate and remote, closely simulating those of cortical motor area excision alone, but more severe. Locomotion is regained more slowly. The fore and hind limbs can be abducted widely months after the operation. The animal falls to one side more readily when, after stroking the side of the head and neck, with the animal leaning strongly against the hand, the hand is suddenly withdrawn. The fore feet frequently slide out when the animal leans against the hand. Reaction to touch seems unaffected. The animal occasionally turns a back somersault when the fore feet are stroked. This occurs also in animals in which the pyramidal decussation and cerebellum are not injured."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

665. Rosenblueth, A. The transmission of sympathetic nerve impulses. *Physiol. Rev.*, 1937, 17, 514-537.—The role of adrenaline and sympathin in the transmission of sympathetic nerve impulses is discussed.—*M. A. Rubin* (Worcester State Hospital).

666. Ross, J. F. Is the transmission of the nerve impulse to the cat's uterus electrical or chemical? *Amer. J. Physiol.*, 1937, 119, 527-530.—Monnier and Bacq have held that both electrical and chemical transmission of the nerve impulses occurs with smooth muscle showing a spike potential, e.g., the nictitating membrane, while chemical transmission alone occurs in muscles showing no spike and excitable only by volleys, e.g., the pregnant cat uterus. By the use of the drug 933F a depression of response to adrenalin but not to hypogastric nerve stimulation was obtained. This is the same differential effect obtained with the n.m. It is held that the effect is explainable on the basis suggested by Rosenblueth and Cannon, and that it makes the postulation of either electrical or chemical transmission unnecessary.—*T. W. Forbes* (Harvard Bureau for Traffic Research).

667. Roth, G. M. The distribution of anhidrosis following interruption of various sympathetic pathways in man. *Amer. J. Physiol.*, 1937, 119, 393.—"These tests were carried out on patients following various types of sympathectomy. The types of operation were divided as follows: bilateral cervicothoracic and lumbar sympathectomy; bilateral resection of the intercostal nerves from the seventh to the eleventh inclusive; posterior infradiaphrag-

matic bilateral splanchnic resection with bilateral removal of the first lumbar ganglia; bilateral ventral rhizotomy from the fifth thoracic to the second lumbar spinal nerves; extensive bilateral splanchnic resection, partial resection of the celiac ganglion, partial bilateral resection of the suprarenal glands and bilateral removal of the first and second lumbar ganglia. Anhidrosis occurred in the cutaneous areas corresponding fairly closely to the segmental level at which the sympathetic nerves were distributed in the spinal nerves. The area of skin supplied by the gray rami of each ganglion corresponds in the main with the area of skin supplied by the homologous posterior root fibers."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

668. Ruch, T. C., Fulton, J. F., & Kasdon, S. Further experiments on the somato-sensory functions of the cerebral cortex in the monkey and chimpanzee. *Amer. J. Physiol.*, 1937, 119, 394-395.—"Two monkeys trained to discriminate grades of roughness (emery paper mounted on drums that are rotated to gain food) were subjected to complete unilateral parietal lobectomy. In retention tests both exhibited inability to discriminate any but gross differences in roughness. With further post-operative training a considerable discriminatory ability was regained but the preoperative level of performance was never attained. This function appears to be encephalized but rather widely represented in the cerebral cortex. In a chimpanzee complete unilateral ablation of the postcentral gyrus and the posterior lobule in one stage induced a severe deficit in the discrimination of both weight and roughness. This extensive cortical lesion did not however completely abolish either function. In an attempt to localize these functions further, unilateral extirpation of the postcentral gyrus (Brodman areas 3, 1, 2, and a part of 5) was carried out in two chimpanzees. . . . These functions are therefore not 'focally' represented in the postcentral gyrus of the infrahuman primate cortex."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

669. Schmitt, O. H. An electrical theory of nerve impulse propagation. *Amer. J. Physiol.*, 1937, 119, 399.—"On the supposition that the capacitance of a critical interface in nerve, and perhaps in other irritable tissues, is a function of the potential difference across that interface, an electrical theory of impulse propagation is proposed which correlates the excitation laws, the velocity of impulse propagation, and the shape of the action potential, in terms of a single set of constants. The assumption of such a variable interface capacitance is in keeping with the experimental work of Blinks on the current-voltage relationships existing at cell interfaces, and is not contradicted by Cole's measurements on nerve impedance. . . . an electrical system has been devised in which each of the active components, assumed by the theory to exist in nerve, is identified with an equivalent electrical element in this system. The validity of the theory is tested by comparing the behavior of this artificial 'nerve' with real nerve."

—T. W. Forbes (Harvard Bureau for Traffic Research).

670. Schmitt, O. H. **Mechanical solution of the equations of nerve impulse propagation.** *Amer. J. Physiol.*, 1937, 119, 399-400.—T. W. Forbes (Harvard Bureau for Traffic Research).

671. Shapiro, H. **Respiration of the optic nerve of the king-crab, with special reference to the relative activity of fibres and sheath.** *Amer. J. Physiol.*, 1937, 119, 402.—"In the king-crab the optic nerve is quite uniform, consisting of bundles of non-medullated axones surrounded by a non-nervous sheath, and extends from eye to brain over a distance varying from approximately 8 to 12 cm., with only a few minor branches. A disparity in oxygen uptake by different portions of the whole nerve, with a maximum existing along the middle portion of the nerve, was demonstrated by Guttman. . . . These determinations, together with a number of whole nerves, confirm the original observations of Guttman on whole nerves. . . . Oxygen uptake by the axones is constant over a period of many hours, whereas the sheaths generally show an increasing metabolism, with time; in general, only the axones show the maximum activity along the middle (more usually the central side) of the nerve. . . . Preliminary experiments on frog nerve have likewise resulted in the finding that the respiration is not uniform along the length of the nerve."—T. W. Forbes (Harvard Bureau for Traffic Research).

672. Solandt, D. Y. **The role of calcium in the excitation of nerve.** *Amer. J. Physiol.*, 1937, 119, 406-407.—"Increasing the calcium content of the environment of nerves of certain crustacea, frogs, fish and man lowered λ , the time constant of accommodation (hastened accommodation), and to a lesser degree lowered k , the time constant of excitation ($0.693 k = \text{chronaxie}$). . . . Accommodation became infinitely slow (λ very large), as shown by spontaneous activity of the nerve, when 16% of the calcium in normal Ringer's solution existed in the ionized form. This represents a calcium ion concentration of 7.2 mgm. per cent. . . . Using normal Ringer's solution with added sodium citrate, the calcium ion concentration at which λ became infinitely large was the same (within 10%) for twelve preparations. . . . Ionized calcium appears to be specific in its effect on λ in nerve, although there are other factors involved in fixing the absolute value of λ . One of these factors is the potassium content of the environment and another may well be normal variations in the calcium content of the calcium gel which constitutes the outer layer of the axon cylinder."—T. W. Forbes (Harvard Bureau for Traffic Research).

673. Stevens, S. S., & Sobel, R. **The central differentiation of synchronized action potentials in the auditory nerves.** *Amer. J. Physiol.*, 1937, 119, 409-410.—"The effort to identify the sensation of pitch with the frequency of impulses in the auditory nerve fails on several counts. . . . The phenomenon of binaural beats, obtained when tones of slightly

different frequency are led to each ear separately, appears to depend upon the central differentiation of the phase relations of synchronized nerve impulses. Due to its refractory phase, a single fiber in the auditory nerve can carry impulses in synchronism with the stimulus only for frequencies below about 800 cycles. At higher frequencies synchronization is obtained by the alternate activity of several fibers. Correlated with these facts is the observation that binaural beats occur only for frequencies below about 800 cycles. In the case of ten observers the frequency at which binaural beats ceased was between 750 and 800 cycles. Apparently central differentiation is possible when synchronization occurs in every active fiber, but not when it is due to the alternate activity of several fibers. The simultaneous arrival centrally of impulses from the two ears produces an enhanced effect, as shown by the fact that in binaural beats the sensation is louder when the tones at the two ears are in phase and weaker when they are out of phase. There is also a slight tendency for the pitch to appear higher when the tones are in phase."—T. W. Forbes (Harvard Bureau for Traffic Research).

674. Stoland, O. O., Greer, R. H., & Blood, R. **Chronic effects of nearly total ablation of the cerebellum.** *Amer. J. Physiol.*, 1937, 119, 410.—"Moving pictures of a dog and photographs of its brain are presented which were taken ten years after very nearly complete extirpation of the cerebellum. The dog shows definite symptoms of ataxia, asynergia, and asthenia. In walking the animal exhibits extensor hypertonias. These symptoms remained unchanged for a period of approximately ten years. The dog was otherwise in good health. A small remnant of the cerebellum the size of a bean was found at autopsy. The brain stem appeared intact."—T. W. Forbes (Harvard Bureau for Traffic Research).

675. Sugar, O. **The non-centrifugal degeneration of severed peripheral nerve.** *Amer. J. Physiol.*, 1937, 119, 411-412.—"With such factors eliminated, it is found that the progressive increase of threshold with time, which occurs in the severed nerve, appears simultaneously throughout its length. Action potential studies are in harmony with this finding. Histological examination of the trunk or of individual fibers teased out for 1 cm. or more also fails to support a centrifugal progression of degenerative changes."—T. W. Forbes (Harvard Bureau for Traffic Research).

676. Tilney, F. **The brain from fish to man. II.** *Sci. Mon.*, N. Y., 1937, 45, 415-426.—This discussion is devoted to the development of the brain in man. The writer is of the opinion that the evolutionary process has not yet come to an end with modern man as its culminating phase.—O. P. Lester (Buffalo).

677. Wyss, O. A. M. **An investigation, by electrical stimulation, into the function of motor and premotor cortex in the monkey.** *Amer. J. Physiol.*, 1937, 119, 424.—"Stimulation of motor and pre-

motor cortex in monkeys under very light ether anesthesia, with current pulses of optimum stimulating efficiency (utilization time at least 10 milliseconds) reveals a characteristic difference between motor and premotor responses, whenever the rate of stimulation is kept as low as, say, two stimuli per second. Stimulation of motor foci in area 4 (Brodmann) gives a simple repetition of short twitches in the particular muscles of the contralateral side, each single twitch corresponding to each single stimulating shock; thus proving the corticospinal motor system to be of a rather simple type. If area 6 (Brodmann) is stimulated at the same rate a typical response appears after a latency, i.e., facilitation period of up to 10 or 15 seconds. This 'premotor response' begins with a small twitch in some distal or proximal muscle, which becomes greater and greater, i.e., involves more and more muscles with each succeeding stimulus. No complete relaxation occurs between subsequent shocks. Each single contraction is sustained by itself. Each becomes superimposed on the preceding one and the whole motor response results in a progressive and purposeful movement (e.g., withdrawal of the leg, or aversive movement of the head). These premotor responses are no more elicitable after removal of area 4 or section between area 4 and area 6, nor have they been obtained from stimulation of area 4 after removal of area 6. They are apparently due to a combined activity of these two motor regions and are probably brought about by simultaneous action of the pyramidal and extrapyramidal projections."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

[See also abstracts 683, 690, 709, 717, 719, 735, 748, 774, 784, 785, 795, 859, 869.]

RECEPTIVE AND PERCEPTUAL PROCESSES

678. Auersperg, A. *Kasuistischer Beitrag zur Rückbildung der hemianopischen Lesestörung.* (A casuistic contribution to the recurrence of a hemianopic reading disturbance.) *Nervenarzt*, 1937, 10, 454.—A case of chronic neuro-encephalomyelitis disseminata showed, in conjunction with the recurrence of an acute hemianopic reading disturbance, an extension of the quadrant defect, usually limited to the lower left side of the visual field, to complete hemianopsia. Perimetric control of the visual field shortly after the recurrence of the reading disturbance disclosed that the defect of the visual field had recurred almost completely. The author considers the complete defectiveness of the left half of the field of vision a necessary condition of the corresponding adjustment of the optic-motor arrangement of the reading act, and believes that the extension of the hemianopic defect is the result of a functional blocking in the sense of a counter-reaction of the sphere of vision.—*P. L. Krieger* (Leipzig/Munich).

679. Béhague, P., & Mothon, —. *Troubles de la vision lors des accélérations durant le vol: "Panopsie des aviateurs."* (Disturbance in vision at the time of acceleration during airplane flight: "aviators'

anopsia.") *Rev. neurol.*, 1937, 67, 197-201.—Pilots call this disturbance "black vision." It consists mainly of a passing blindness occurring when there is rapid change from one direction to another, such as is experienced when an airplane rises rapidly after a prolonged nose-dive. The authors suggest that it may be caused by cerebral ischemia or by disturbance in the retinal circulation.—*M. H. Piéron* (Sorbonne).

680. Berger, C., & Boje, O. *Über den Einfluss von Sauerstoffmangel auf das Auflösungsvermögen des emmetropen Auges.* (The influence of oxygen deficiency on the discriminatory ability of the emmetropic eye.) *Skand. Arch. Physiol.*, 1937, 77, 129.—A method is described whereby the discriminatory ability of the normal eye can be measured when the oxygen supply is constantly reduced. The materials used were luminous squares on a dark background and illuminated black squares on a white background. There was little or no change in the ability to perceive the luminous squares, but in the second part of the experiment perceptual discrimination was decidedly reduced. The threshold at which two luminous squares of 2 millimeters at a distance of 6 meters were perceived as one remained unchanged, while the threshold at which they were perceived separately varied from 10 to 30%. Both thresholds varied from 30 to 100% when the other method was used. It is probable that some central factor, like the sensitivity to brightness differences, accounts for this discrepancy.—*P. L. Krieger* (Leipzig/Munich).

681. Blondel, A. *Sur la recherche des signaux à éclats brefs par les navigateurs.* (Research on signals of brief illumination for navigators.) *C. R. Acad. Sci., Paris*, 1937, 204, 1769-1773.—The discussion is based on the physiological phenomena of the eye, the author being in favor of the greatest possible reduction in the duration of light flashes in the signals of maritime beacons. He cites experimental data which lead him to conclude (1) that a flash can be perceived only during accidental pauses in the eye movements, and (2) that at the threshold of sensation, since the elementary territory of the fovea is that of a single cone, all rapid sweeping movement is detrimental. Furthermore, we must take into consideration the phenomenon of inhibition in a cone which is suddenly stimulated (Green). From the data given he obtains certain suggestions for the rationalization of eye movements.—*G. Goldman* (Sorbonne).

682. Brecher, G. A. *Die subjektiven Helligkeitswerte des Spektrums beim Affen.* (The subjective brightness values of the spectrum in the monkey.) *Z. vergl. Physiol.*, 1936, 23, 771-780.—The daylight and twilight intensity-threshold curves of the spectrum were determined for a female mangabey and for the experimenter (a slightly deuteranomalous trichromat) under comparable conditions. For the daylight-vision tests the monkey was first trained to reach for food in front of a constant light, then in the tests was presented with a flickering

light which in successive trials gradually approached its fusion threshold. Under light-adaptation, the intensity maximum of the monkey (approximately 585 $m\mu$) lay slightly higher than that of the experimenter (approximately 580 $m\mu$). Otherwise the brightness curves followed parallel courses throughout the spectrum. For twilight-vision tests 14 spectral steps were employed, and each in turn was gradually brought to its threshold by means of gray filters. Results showed that the monkey was subject to the Purkinje shift much as was the experimenter. The brightness maximum now lay approximately at 543 $m\mu$ for both subjects. In this case also the intensity-threshold curves were very similar throughout the spectrum, with the exception that in the longest waves the intensity thresholds of the monkey were lower than were those of the experimenter.—T. C. Schneirla (New York University).

683. Eyster, J. A. E., Bast, T. H., & Krasno, M. R. The origin of cochlear potentials. *Amer. J. Physiol.*, 1937, 119, 305.—"In a series of observations on guinea pigs it is found that in this animal, the development of normal cochlear potential in response to air or bone conducted tones does not depend on the organs of Corti, the tectorial or Reissner's membranes, or on an intact cochlear duct. The results also offer strong evidence against a nervous origin of these potentials. . . . The cochlear response appears to be extraordinarily resistant to all influences not causing gross physical change. It has been previously shown that disturbance of pressure relations between the endo- and perilymph systems will greatly reduce or abolish the response. This observation, together with those reported at this time, lead us to the conclusion that the cochlear potentials have a purely physical origin. In a vibrating mechanism consisting of aqueous phases separated by membranes, such as the cochlea represents, it would appear that electrical potentials would inevitably result from the physical pattern present."—T. W. Forbes (Harvard Bureau for Traffic Research).

684. Firgau, H. J. Über den Aufbau des periodischen Sehorgans. (Concerning the nature of periodicity in visual perception.) *Arch. ges. Psychol.*, 1937, 98, 321-325.—The author reviews the findings of Charpentiers and those of Gerard and Neuhaus and shows that their apparent differences are due to the technique used. Both studies deal with the intermittent action of the sense of sight, one emphasizing the stimulus as the cause, the other the organ itself. The author in his studies tries to give due consideration to both. He used bright markings on a dark background and varied the fixation from centric to eccentric points. With diagrams he shows the curvature of lines as sensed when the disk is rotated. This phenomenon is explained by reference to the retinal sensitivity in different areas. The author points the way to further studies of this phenomenon.—A. B. Herrig (Michigan Central State Teachers College).

685. Geblewicz, E. L'établissement de la sensation thermique en fonction de la durée d'excitation.

(The establishment of temperature sensation as a function of the duration of the stimulation.) *C. R. Soc. Biol., Paris*, 1937, 125, 912-915.—A description is given of a piece of apparatus for the experimental measurement of temperature sensations aroused by radiant heat. The author used the ascending and descending method and obtained a series of data which showed that the maximum levels of stimulation were reached more quickly as the intensity of the stimulus was decreased. The temperature θ of the skin varied as a function of the time t , according to the formula:

$$\theta = \theta_1 + (\theta_0 - \theta_1)e^{-at}$$

(θ_0 is the initial temperature, θ_1 is the temperature at asymptotic equilibrium, a is a constant independent of the intensity of the flow, while θ_1 is proportional to it.)—G. Goldman (Sorbonne).

686. Gilmer, B. H. The relation of vibratory sensitivity to pressure. *J. exp. Psychol.*, 1937, 21, 456-463.—In this study the sensitivity of different regions of the skin to stimulation by mechanical and electrical vibration was investigated. Results are summarized as follows: (1) The regions of the skin most sensitive to mechanical vibration were those spots which were also highly sensitive to pressure. (2) There was a marked difference between the dorsal and ventral sides of the arm with respect to vibratory sensitivity by mechanical stimulation. (3) The only spots on the surface of the skin yielding vibratory sensations to stimulation by alternating electrical currents were those points which were highly sensitive to pressure. (4) Electrical stimulation of spots near, but not on, pressure points gave the experience of "burning vibration." (5) Electrical stimulation of local skin areas not containing pressure-sensitive spots yielded the experience of "burning pain." (6) The only skin regions mediating vibratory experiences to the alternating electrical currents were the palms of the hands, the soles of the feet, and pressure-sensitive spots in any general region of the body. In general, the data support the hypothesis that vibration sensations form a perceptual pattern of feeling of which pressure is but another temporal expression.—H. W. Karn (Pittsburgh).

687. Groenouw, A. [Hereditary color blindness: a genealogy of five generations.] *Klin. Mbl. Augenheilk.*, 1936, 96, 433 ff.—In 1920 Groenouw reported a genealogy of color blindness for red and green (Graefe and Saemisch: *Handbuch der gesamten Augenheilkunde*, ed. 3, Leipzig, W. Engelmann, 1930). He has now succeeded in completing this genealogy over five generations. A man and a woman of the first generation were not color blind. The disturbance originated most probably in the wife's family. A diagram of the genealogy is given in illustration. Among the 32 descendants there were 8 color-blind men whose mothers were free from this disorder. 5 women, including the one of the first generation, had color-blind sons, 2 had none, and the other woman had no children. The color-blind men had no descendants, and 2 men with normal perception of color had no color-blind chil-

dren. Color-blind women were absent, but 8 of the 19 men were color blind. Color blindness was absent in all the families of those who married into this family. The disturbance was transmitted according to the Horner-Bollinger type of heredity. The healthy women transmitted the disorder to their sons, but not to their daughters. Men free from color blindness did not transmit it to their descendants.—(Courtesy *Child Developm. Abstr.*)

688. Hebb, D. O. The innate organization of visual activity. II. Transfer of response in the discrimination of brightness and size by rats reared in total darkness. *J. comp. Psychol.*, 1937, 24, 277-299.—Hooded and albino rats were trained to respond to the brighter of two areas and were then presented with the positive area and a still brighter one. Other animals performed in a similar discrimination problem, but with different sizes instead of brightnesses. All of the animals had been reared in total darkness until maturity, when the above tests were made. Since the animals had never seen the third brightness or size, an immediate transfer to it was taken as evidence for innate organization. The author says that "the animals were making a discrimination on the basis of the relative values of the stimuli, since they (1) chose the stimulus presented for the first time, and rejected the training stimulus, or (2) failed to discriminate the stimuli . . . breaking down of the discrimination indicates some perception of absolute stimulus value, as limiting the range within which a perception of the relative occurs. It is concluded that an innate property of visual perception is the organization of gradations of intensity of size into ordered and directed series. It is argued that these results are incompatible with a stable-route hypothesis of neural action." Bibliography.—N. L. Munn (Peabody).

689. Hecht, S., Peskin, J. C., & Patt, M. Visual intensity discrimination in different parts of the spectrum. *Amer. J. Physiol.*, 1937, 119, 330.—"We have measured our own visual intensity discrimination with white light and with different parts of the spectrum isolated with Wratten monochromatic filters. . . . Contrary to the classically accepted measurements of Koenig and Brodhun, we find with Aubert, Blanchard, and with Steinhardt that the relation of $\Delta I/I$ to I over the whole visual range using white light shows two distinct steps, a low intensity portion and a high intensity portion. The identification of these two sections with rod and cone activity respectively is confirmed by the behavior of the function with different parts of the spectrum. With red light the relation between $\Delta I/I$ and I is continuous and single for the whole intensity range. With shorter wave-lengths the low intensity section makes its appearance, and becomes larger as the light goes toward the blue. With extreme violet light, the low intensity section is almost the same size as the high intensity section. This behavior in the spectrum is entirely in keeping with the relative spectral sensibility of rods and cones, as separately determined, and conforms with

the well known photochromatic interval."—T. W. Forbes (Harvard Bureau for Traffic Research).

690. Hinsey, J. C., & Phillips, R. A. Studies on diaphragmatic sensation. *Amer. J. Physiol.*, 1937, 119, 336.—"Cats were observed following recovery from etherization. . . . It is concluded that the thoracolumbar and vagal pathways are not essential for nociceptive sensation from the central portion of the diaphragm."—T. W. Forbes (Harvard Bureau for Traffic Research).

691. Holway, A. H., Smith, J. E., & Zigler, M. J. On the discrimination of minimal differences in weight. III. The role of frequency. *J. exp. Psychol.*, 1937, 21, 423-432.—The experimental relationship between differential sensitivity to weight and frequency of rhythmical lifting was determined bimanually at 8 different frequencies for 3 observers. A method of limits was employed. For a constant level of intensity ($W = 100$ grams), differential sensitivity ($= 1/\Delta W$) at first increases, then passes through a maximum, and finally decreases gradually for each observer as frequency is increased. This finding is accounted for in terms of a neurophysiological theory of differential sensitivity. Discriminatory precision ($1/\sigma_{\Delta W}$) was found to vary directly with $1/\Delta W$ even though W was held constant. This finding tends to support the presumption that the relation between these two concepts may be an invariant property of the human subject.—H. W. Karn (Pittsburgh).

692. Kawasima, S. [The influence of time intervals upon the perception of arm motion.] *Jap. J. Psychol.*, 1937, 12, 270-289.—7 subjects were tested on a modified form of a cinematometer. In the first tests an active self-propelling motion was adopted, its speed being high (an angle of 10° per $1/5$ sec.), moderate (10° per sec.), or low (10° per 2 sec.). Time intervals between the standard and test motions were $1''$, $2''$, $4''$, $8''$ and $16''$. An angle of 5° or 10° was used for the arm motion. In the second tests the motion was passive, not self-operating, speed being either high or low, but other conditions were the same as in the first tests. The third tests were executed by passive and low-speed motions, the standard angle being 20° and the test angles 14 , 16 , 18 , 20 , 22 , 24 , and 26° . The outstanding characteristic of the fourth tests was the counterclockwise motion, contrary to all previous experiments. In these four kinds of test both stimuli, the standard and the test, were given in different positions, but in the fifth the test motion was purposely repeated at the same place at which the standard took place. The results show that comparison is easier when the motion is active or fast than when it is passive or slow. Concerning errors caused by increased time intervals, the space was overvalued when the comparison was easy and undervalued when it was difficult. These phenomena were explained from the standpoint of the Gestalt doctrine. English summary.—R. Kuroda (Keijo).

693. Kobrak, H. G., & Perlman, H. G. Animal experiments on normal and pathological sound

conduction. *Amer. J. Physiol.*, 1937, 119, 353-354.

—"The same experiment has been carried out after artificial impairment of the normal sound conduction by plugging the outer acoustic canal. The amount of sound intensity now entering the cochlea by aerocochlear conduction is no longer negligible. The sealing of the bulla opening diminishes the reflex contractions considerably. A normally unimportant pathway has become an essential sound conductor in deafness. . . . After destruction of the ossicles an air conducted sound may under certain conditions stimulate the cochlea so strongly by bone conduction, that the middle ear muscle reflex is elicited. . . . The intra-labyrinthine fluid was studied to determine its importance for the three main pathways of sound. The loss of function for ossicular, aerocochlear and bone conduction is uniform, if one removes the labyrinthine fluid. The inner ear liquid, therefore, seems to be a part of all pathways, and could be called the 'final common path' for all sound routes. A direct irritation through the bone could not be demonstrated."—T. W. Forbes (Harvard Bureau for Traffic Research).

694. Kuroda, R. Time estimation of longer intervals in the white rat. *Acta psychol. Keijo*, 1936, 2, 155-159.—The author made an apparatus for automatic presentation of food every 20 or 30 minutes. The signal for the presence of food was at first given by the lighting of a small electric bulb at the window of the box in which the animal was accommodated, and the food-plate was made to come just outside of the window and to remain there for five minutes. Every pushing of the door to get food, the period for food presentation, and successive intervals of one hour were recorded on a smoked paper. 2 of the 4 rats did not succeed in acquiring the concept of longer intervals in any sense even after a practice of a month or more. The others showed a fairly regular performance corresponding to predetermined lapses of time, though a pronounced tendency towards overestimation of the objective time was observed in each case. The lapse of 30 minutes is too long to be perceived as a unit of time interval, for irregularity of performance was prone to increase in that situation. By another experiment the author found that rats are able to estimate quite accurately an absolute interval of time as long as 20 minutes, but overestimation of real time was manifested.—R. Kuroda (Keijo).

695. Kuroki, S. [The influence of a light stimulus upon hearing.] *Jap. J. Psychol.*, 1937, 12, 253-269.—A vacuum-tube oscillator of 800 vibration rate in one room and a loud-speaker or a receiver in another sound-proof one were used. Electric lights of various intensities were used as stimuli, and 22 university students were the subjects. When the standard tone and a light stimulus are given simultaneously, the tone can generally be heard with more intensity than it really has, which proves that this has no relation to the immediate seeing of the loud-speaker as a sound source. The whole illumination of the visual field is not an urgent factor for the above influence, but the smaller the part illuminated the stronger the

influence is. In accordance with the increase of the intensity of the light stimulus, the influence increases, but within limits; in comparison with the increase of brightness, that of the influence is very small. When the brightness increases along with a standard tone, the latter was usually heard as weaker. English summary.—R. Kuroda (Keijo).

696. Le Grand, Y. *Essai sur la diffusion de la lumière dans l'oeil*. (A study of diffusion of light in the eye.) *Rev. Opt. (théor. instrum.)*, 1937. Pp. 45.—Light can be diffused in the eye and reach the retina outside the image of the light source. The three parts of the study include: a description of the phenomena which indicate the existence of diffused light in the eye and an examination of its causes; a photometric study of diffused light and its variations in relation to certain factors, particularly that of adaptation; and the problem of dazzle. The bibliography contains 35 titles.—M. H. Piéron (Sorbonne).

697. Le Grand, Y., & Geblewicz, A. *Sur le papillotement en vision latérale*. (On flicker in peripheral vision.) *C. R. Acad. Sci., Paris*, 1937, 205, 297-298.—The authors studied the effect of flicker on monocular vision without an artificial pupil, the flicker being obtained by rotation of a sector disk. The flicker ceased after a certain number of interruptions, independent of the frequency but as a function of the brilliance. A second observable fact was the disappearance of color, which was total under certain favorable conditions. Only the diffused light which surrounded the image of the light source conserved its color.—G. Goldman (Sorbonne).

698. Mast, S. O., & Stahler, N. The relation between the luminous intensity, adaptation to light, and rate of locomotion in the *Amoeba proteus* (Leidy). *Biol. Bull. Woods Hole*, 1937, 73, 126-133.—In any light of given intensity, as adaptation to light increases the rate of locomotion increases to a maximum and then remains constant; in constant light of different intensities, time of adaptation decreases from about 15 minutes at 225 m.c. to about 7 minutes at 15,000 m.c., and then increases to about 30 minutes at 40,000 m.c. The rate of locomotion increases from 128.8 ± 10.8 micra per minute at 50 m.c. to 219.3 ± 11.4 micra per minute at 15,000 m.c., and then decreases to 150.2 ± 8.5 micra per minute at 40,000 m.c. Increase in rate of locomotion with increase in intensity to the optimum at 15,000 m.c. is largely due to some unknown action of the longer waves of light. Decrease in rate with increase in intensity beyond the optimum is probably due to the gelating action of the shorter waves of light.—W. J. Brogden (Johns Hopkins).

699. Metzger, W. *Zur Kenntnis des taktil-motorischen Umraums*. (The knowledge of the tactual-motor environment.) *Ber. 15. Kongr. dtsch. Ges. Psychol., Jena*, 1936, 211-216.—Experiments on blind subjects showed that, like subjects with normal vision, they experienced two tactual sensations as coming from separate sources when they were a certain distance apart, but from a single

source when the distance was smaller. In part, the explanation must be sought in the orientation of the parts of the body that were stimulated (parallel parts giving optimal results). The blind person's concept of the body and its immediate environment is largely the same as that of persons with normal vision. Orientation in this environment, then, does not depend primarily on visual cues.—*H. Beaumont (Kentucky)*.

700. Mullin, F. J. Changes in irritability to auditory stimuli on falling asleep. *Amer. J. Physiol.*, 1937, 119, 377-378.—"Last year we reported on the intensity of auditory stimulus necessary to awaken the human sleeper at various times during the night. We found that the depth of sleep is more closely related to the motility of the sleeping subject than to the hour of the night. The present studies were carried out on five adults and two children, using a similar method for measuring the changes in irritability, during the act of falling asleep, either for an afternoon nap or on first going to bed at night. The auditory stimulus was delivered through a loud-speaker near the head of the sleeper. . . . The curve obtained for the threshold of irritability is S-shaped in character, rising gradually for the first ten minutes after the onset of sleep and then showing a much steeper rise during the next ten minutes and finally reaching its peak in about half an hour. This increased threshold to auditory stimuli is maintained for another ten or twenty minutes. Following this the return toward the waking level of response is steeper than the rise was."—*T. W. Forbes (Harvard Bureau for Traffic Research)*.

701. Neuhaus, W. Das Pulfrichsche Stereo-phänomen und die räumliche Wahrnehmung. (Pulfrich's stereo-phenomenon and the perception of space.) *Z. Psychol.*, 1935, 135, 192-201.—Pulfrich's phenomenon was first described by M. Wolf; he noticed while working with a stereo-comparator a stereo-effect in which a star, after having its apparent distance equated with that of a measurable point, seemed to change its position with rapid movement of the plates. The author shows that the phenomenon depends upon the innate retinal structure and that it can be accounted for by the same factors as those involved in the perception of space.—*G. F. J. Lehner (Brown)*.

702. Ohtsuka, N. Über die absolute und relative Wahl beim Affen *Cercopithecus* sp. (On absolute and relative choice in the monkey *Cercopithecus* sp.) *Acta psychol. Keijo*, 1937, 3, 33-44.—With two disks of Zimmermann's gray paper laid side by side, two monkeys were tested to learn whether they react relatively or absolutely. When they were trained to discriminate smaller differences between gray papers, they usually chose relatively, but for greater differences choice was made absolutely, showing that the change of choice criteria depends upon the degree of difference in stimulus pairs. But in fact the criteria always remained the same throughout the whole period of training. The interval between the training and the critical tests had no pronounced effect upon

the selection. The animals trained for the differentiation of color also chose the figures of different brightness always in accordance with the relation of training.—*R. Kuroda (Keijo)*.

703. Okata, T. [Studies on contour effect in successive exposition of figures.] *Jap. J. Psychol.*, 1937, 12, 335-359.—By means of Chiwa's tachistoscope one figure was exposed after another with several variations of both exposure and interval. Pairs of figures used were a disk and a circle and a regular polygon and its outlined figure, of different sizes and either black or gray. The distance from the subject to the figures was 50 cm., the latter being lighted by two 30-watt bulbs, which however, were screened from view. The experiments were done in a dark room. The subjects were 11 students of psychology. The tests were divided into 17 kinds, dealing with three important problems: temporal relations as stimuli, the nature of a circular contour figure, and that of a regular polygon contour. The time necessary for the complete disappearance of the first figure was demonstrated and the effect of a circular or polygonal contour upon the first figure was reported. English summary.—*R. Kuroda (Keijo)*.

704. Rush, G. P. Visual grouping in relation to age. *Arch. Psychol.*, N. Y., 1937, No. 217. Pp. 94.—The primary purpose was to determine the effect of proximity, similarity, and continuity on visual grouping and to determine the relationship of these different factors to each other. The secondary purpose was to determine how the influence of these factors was affected by the age of the subjects. A new and potent factor, direction, was discovered. Results indicate that proximity is stronger than direction, similarity stronger than proximity, and continuity stronger than similarity. Age has a strong influence on the grouping and on the absolute effectiveness of each of the factors.—*E. M. Achilles (Columbia)*.

705. Sattler, C. H. Stereoskopische Bilder für schielende Kinder. (Stereoscopic pictures for children who squint.) Stuttgart: Enke, 1937. Pp. 23. RM. 6.10.—*R. R. Willoughby (Brown)*.

706. Segawa, Y. [Gestalt qualities as a factor of determining the depth localization of light-points.] *Jap. J. Psychol.*, 1937, 12, 409-415.—Tests were carried out with 5 subjects in a dark room, small points of light being projected as stimuli; the distance between the subject and the standard light was 4 meters. When the two points of different intervals were simultaneously given on a vertical axis, the longer the space the nearer the test point appeared phenomenally. When the three points were used, two of which were on a horizontal line with the standard lights and the rest on the same plane as a test point but at varying distances from the other two, the phenomenal relation between the standard and the test light points were the same as in the above case. English summary.—*R. Kuroda (Keijo)*.

707. Takatsuki, R. Vision as a factor of distance discrimination in the albino rat. *Acta psychol.*

Keijo, 1937, 3, 1-31.—This study was made to determine the visual acuity of albino rats. 4 male and 8 female animals were trained on a symmetrical T-shaped apparatus with electrified grids. Preliminary tests were undertaken prior to the main ones in order to get the animals accustomed to the maze situation. After four kinds of main experiment it was found that the rats can differentiate 15 cm. from 19 or 18 cm.; some can discriminate 50 cm. from 40, 42, or 43 cm.; and some can even discriminate 15 cm. from 11 or 12 cm. From these data it was concluded that the threshold in depth discrimination of the albino rat becomes lower and lower as the distance increases. The thresholds are about 3 cm. in distances below 20 cm., 5 or 6 cm. in the neighborhood of 20 to 40 cm., and from 7 to 10 cm. in those between 40 and 50 cm. Averages of performance given in percentages under illumination and in darkness are 87 and 54, showing the important role of vision in distance perception.—R. Kuroda (Keijo).

708. Tasiro, T. [On the temporal factors in the Gestalt of movement.] *Jap. J. Psychol.*, 1937, 12, 290-308.—3 subjects, students of psychology, were instructed to tap two separated marks with the right forefinger about 30 times. The marks were each 2 cm. in diameter and placed on an inclined plane of 40° from right to left, and the distance between them was 5, 15, 30 or 40 cm. Each tapping and the time were registered on a smoked paper. Routes of successive movements were photographed on a dry plate by means of a small lamp on a ring on the moving finger. It was found that when the tapping movements were carried on at a spontaneous, natural rate, a compound Gestalt with figure and ground was built up and the meaning of each separate tapping was lost, while when the movements were executed at a slow or fast rate this was not found, i.e., they were completely separated from each other or they formed a single whole movement without any distinction of figure and ground. The rate of movements consists of tempo and speed, the former being the time interval between tappings and the latter the movement speed to cover the distance between marks. It was demonstrated by these experiments that if tempo was the same, no matter how speed was varied, the movement-Gestalt was not altered; while even though speed was kept constant, if the tempo was varied the movement-Gestalt was also varied. Tempo is, therefore, a more powerful determining factor than speed in the construction of the Gestalt movement. English summary.—R. Kuroda (Keijo).

709. Tsang, Y-C. Visual sensitivity of rats deprived of visual cortex in infancy. *J. comp. Psychol.*, 1937, 24, 255-262.—7 rats deprived of the occipital halves of both cerebral hemispheres at the age of 22 days were tested for brightness, size, and pattern discrimination in Lashley's jumping apparatus three months later. 12 other animals had part of the striate areas destroyed. Both brightness and size discriminations were readily established, but no animal reached a criterion of 20 successive

correct trials in pattern discrimination (alternate black and white stripes with vertical stripes vs. horizontal). Training was in each case discontinued at 100 trials. Although they did not reach the criterion arbitrarily set by the experimenter, 4 rats exhibited better than chance accuracy. It is claimed that these animals possessed "a primitive sort of pattern vision." This was not explicable in terms of the available neurological data. In general, the results are comparable with those found for rats subjected to similar operations in adult life. Bibliography.—N. L. Munn (Peabody).

710. Verrier, M. L., & Escher-Desrivieres, J. *Recherches sur la sensibilité lumineuse des poissons.* (Studies on light sensitivity in fish.) *Bull. Soc. zool. Fr.*, 1937, 61, 126-136.—These comparative studies on 12 girellas (*Julis girellae* Risso), 5 scorpion fish (*Scorpaena scrofa* L.), 2 conger eels (*Conger vulgaris* L.), and 5 dogfish (*Scyllium canicula* L.), species which differ in the structure of their retinae, showed under laboratory conditions sensitivity to variations in intensity of the illumination in environment only for the first named group. The retina in the girellas is the least rich in rods of the group studied, and these fish show a negative phototropism. These two facts are clearly opposed to the theory of duality in vision. The authors believe that through further comparative experiments we shall soon be able to establish a relationship between the behavior of girellas and the properties of their retinal pigmentation.—G. Goldman (Sorbonne).

711. Werner, C. F. Über die anatomischen und funktionellen Beziehungen zwischen Ampulle und Bogengang. (The anatomical and functional relation between ampulla and semicircular canals.) *Arch. Ohr., Nas.- u. KehlkHeilk.*, 1937, 143, 257.—P. L. Krieger (Leipzig/Munich).

712. Wiggers, H. C. The effect of contraction of the intra-aural muscles on transmission of sound in the middle ear. *Amer. J. Physiol.*, 1937, 119, 420.—"The stapedius and tensor tympani muscles in guinea pigs under dialurethane anesthesia may contract spontaneously every few seconds. This allowed measurement of the effects of such contraction upon transmission of sound across the middle ear, inasmuch as with this anesthesia the muscles fail to respond reflexly to sound. . . . During contraction: (1) the loss in transmission increases linearly with the decrease of frequency (plotted logarithmically) from 1100 c.p.s. to 100 c.p.s., till at 100 it approximates 45 db; (2) from 1300 to 1800 the sensitivity increases above normal, with the greatest increase in sensitivity at 1500 c.p.s.; and (3) the contraction does not affect the transmission of tones above 2000 c.p.s. Apparently, therefore, the stapedius and tensor tympani may tune up the transmission apparatus in such a way that it becomes supersensitive to a few tones of medium frequency, but their predominant function is to effect a loss of sensitivity for a greater range of low tones, this loss being inversely proportional to the logarithm of the frequency. This implies a protective function

against low tones of great amplitude, as was predictable from previous knowledge of mechanics of the middle ear. This may occur normally as the result of reflex contractions to sound stimuli which have been demonstrated previously."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

713. **Yamane, K.** [On the perception of curves.] *Jap. J. Psychol.*, 1937, 12, 223-252.—4 subjects took part in this experiment. A series of arcs of the same length but of different curvature were compared. The author found that there are two important factors in the comparison of length; the similarity of lines and their temporal re-arrangement, and that an arc is apt to be overvalued more than a straight line. German summary.—*R. Kuroda* (Keijo).

[See also abstracts 594, 621, 651, 656, 659, 668, 716, 743, 768, 781, 857, 907, 990.]

LEARNING, CONDITIONING, INTELLIGENCE

(incl. Attention, Thought)

714. **Bernhardt, K. S., & Herbert, R.** A further study of vitamin B deficiency and learning with rats. *J. comp. Psychol.*, 1937, 24, 263-267.—Early deficient and late deficient animals were compared with controls. Approximately 30 animals were in each group. An escape-from-water maze was utilized. In terms of each of five criteria of learning efficiency, the early deficient rats manifested greater retardation than the late deficient. The differences were not statistically significant. The investigators conclude that early deficiency is followed by greater retardation than late deficiency because the nervous system, which is undergoing rapid change in infancy, is more greatly affected by deficiency during early as compared with late development.—*N. L. Munn* (Peabody).

715. **Bernhardt, K. S., & Snygg, D.** The effects of cues on the choice of the shorter path. *J. comp. Psychol.*, 1937, 24, 269-276.—Rats selected the shorter of two paths under each of the following conditions: when the patterns of the two paths were alike (V-shaped apparatus); when additional visual cues were placed in the paths; when the angle of divergence of the paths was varied between 60° and 240°; when the length of the short path varied; and when various visual cues were eliminated by the use of curtains. Ability to select the shorter of two paths "is considerably affected by the presence or absence of differential cues."—*N. L. Munn* (Peabody).

716. **Bogoslovski, A. I.** An attempt at creating sensory conditioned reflexes in humans. *J. exp. Psychol.*, 1937, 21, 403-422.—If a person has been subjected to a series of experiments in which a light stimulation is given at a certain minute of the dark adaptation, thus occasioning a subsequent heightening of electrical sensitivity both in the stimulated and in the nonstimulated eye, then this person becomes apt to manifest a similar spontaneous heightening of electrical sensitivity at the same minute of the dark adaptation with light stimulation. This

phenomenon can be understood as a sensory reflex conditioned by the time elapsed from the beginning of the dark adaptation. A special series of experiments confirmed the supposition that a positive conditioned sensory reflex could be created by other, previously indifferent agents. Thus after the sound of a metronome had been combined several times with light stimulation, a heightening of electrical sensitivity could be called out by the sound of the metronome unaccompanied by light.—*H. W. Karn* (Pittsburgh).

717. **Brogden, W. J., & Gantt, W. H.** Cerebellar conditioned reflexes. *Amer. J. Physiol.*, 1937, 119, 277-278.—"Using this foreleg extension to cerebellar stimulation as the unconditioned reflex we elaborated after five to fifteen trials a conditioned reflex to an auditory stimulus preceding the cerebellar shock by 2 seconds. Elaboration occurred as quickly as do conditioned reflexes from a painful skin stimulus—notwithstanding complete absence of signs of pain. The latent period was short—less than 0.5 second. The position of the electrodes shown by x-ray and at autopsy (within the lateral cerebellar lobe and well beneath the cerebellar cortex) as well as the character of the responses is evidence that the movements were not due to current spread to the brain stem but were primarily caused by cerebellar stimulation. The rapid formation and the stability of the conditioned reflex indicate that it was not elaborated to proprioceptive stimuli resulting from the stimulation. In the light of this apparent integrative function of the cerebellum further researches will be directed to the relation of this organ to the higher nervous structures—viz., the thalamus and the cerebral cortex."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

718. **Cowles, J. T., & Nissen, H. W.** Reward-expectancy in delayed responses of chimpanzees. *J. comp. Psychol.*, 1937, 24, 345-358.—In a two-cup delayed-reaction situation, chimpanzees exhibited greater accuracy when a large reward was placed under the cup than when the reward was small. In a constant series the chimpanzees saw the cup baited with a large or small piece of food, but always received a small piece for reward. Two of the three subjects responded more accurately for a large than for a small piece of food when the food-reward was actually that observed at the time of baiting than when a constant reward was given. Reward-expectancy rather than the size of the reward as such is invoked to account for these results. There was a careful control of temporal factors under the two conditions.—*N. L. Munn* (Peabody).

719. **Gantt, W. H.** Essential anatomical structures of the reflex arc for establishment of conditioned reflexes. *Amer. J. Physiol.*, 1937, 119, 313-314.—"The classical unconditioned reflex arc consists of sense organ plus afferent nerve, central connection, efferent nerve plus executor organ. Ordinarily the conditioned reflex is built upon this by establishing functional connection between a stimulus falling upon sense organ and the central

excitation produced by the unconditioned stimulus. Which of these elements are indispensable? Executor organ and peripheral nerve have been eliminated without destroying the ability to form conditioned reflexes. . . . Further experiments have eliminated the afferent limbs of both unconditioned and conditioned reflex. Unconditioned reflexes were obtained after eliminating successively parts of the afferent arc, up to the motor area of the cortex. . . . In all but the last instance the movement evoked by direct faradization could be conditioned to signals. . . . The external receptor and the afferent nerve of the conditioned reflex arc were eliminated by replacing the usual conditioned signals by stimulations originating in various internal structures, viz., spinal cord, cerebellum, cortical sensory areas (area striata). . . . Thus neither motor nor sensory peripheral structures are necessary for conditioned reflex formation."—T. W. Forbes (Harvard Bureau for Traffic Research).

720. Gilbert, G. M. The age difference in the hedonistic tendency in memory. *J. exp. Psychol.*, 1937, 21, 433-441.—The aim of this study was to determine whether the hedonistic factor in memory is more evident in adults than in children. As a preliminary test 20 9½-year-old children and 20 adults averaging 40 years of age were tested for recall one week after learning a list of words containing 5 pleasant and 5 unpleasant words. The frequency of recall for each of the words in immediate and delayed recall for all S's was noted, and the rank order of affective potency for the 10 words was indicated by all S's. On the basis of the results of the experiment and an analysis of all the recent studies on the hedonistic factor in recall, the following general rules may be formulated: (1) The hedonistic tendency in memory is more evident in adults than in children, which points to a development of hedonistic selectivity in memory from childhood to adulthood. (2) The laws of vividness and effect are jointly operative in the selection of affectively-toned items in recall, vividness being more pronounced in immediate than delayed recall, and more pronounced in children than adults.—H. W. Karn (Pittsburgh).

721. Grossman, M. R., & Cason, H. The influence of a short preliminary examination of learning material. *J. exp. Psychol.*, 1937, 21, 473-475.—Paired associates, series of familiar words, and meaningful reading matter were used as learning materials in this study. Two equalized sets of each of the three kinds of material were used with each subject, one set with massed and the other with distributed learning. The total time used in massed learning was 30 minutes; in the distributed learning 6 minutes were allowed for the short preliminary examination and 24 minutes for the later learning. The results indicate that the short preliminary examination of the learning material does not improve the efficiency of learning.—H. W. Karn (Pittsburgh).

722. Hanawalt, N. G. Memory trace for figures in recall and recognition. *Arch. Psychol.*, N. Y.,

1937, No. 216, Pp. 89.—The Gestalt hypothesis of "progressive autonomous changes in the memory trace," hitherto examined by the method of successive reproductions, is here approached by other methods, including the recognition method and the method of reproduction by separate groups of subjects at different time intervals elapsed since learning. Successive reproduction fails to show any general tendency for progressive trend. The recognition score is higher than for recall. Recognition is shown to be almost as good when the attempt at reproduction had failed altogether as when some figure had been drawn as a reproduction. The technique of Warner Brown was used. The material was 24 of Wulf's original 26 figures on lantern slides, divided into three series. The figures were shown for 15-20 minutes. The findings are interpreted in support of a forgetting-reconstruction theory of the memory trace in conjunction with a reaction theory of perception.—E. M. Achilles (Columbia).

723. Hosszúné-Arpad, E., & Benoschofsky, I. Kontraszthatások az emlékezetben, I & II. (Contrast effects in learning.) *Lelektani Tanulmányok*, 1937, 1, 54-60.—Köhler and v. Restorff have examined three cases: homogeneous sequences, heterogeneous sequences, and homogeneous sequences with one different member. They found that the success of learning stands in reverse proportion to the degree of accumulation. These experiments concern the case of two homogeneous members among several heterogeneous ones: two pairs of numbers, with or without logical sequence, among 6 to 8 pairs of words, and vice versa. It is found that the Köhler-Restorff phenomenon depends not only on degree of accumulation but also on the quality of the material. It is further found that insertions are easier to learn if the learning of the background is difficult and more difficult if the learning of the background is easier.—P. Ranschburg (Budapest).

724. Irwin, F. W., & Seidenfeld, M. A. The application of the method of comparison to the problem of memory changes. *J. exp. Psychol.*, 1937, 21, 363-381.—Six figures (open circle with gap at top, obtuse angle with angle opening directly upward, arc-line figure, acute angle open toward upper right, four dots disposed as approximate square with eccentric upper right hand corner, open triangle with gap at top) were exposed visually to groups of subjects who made judgments on 11 characteristics of the figures (width of gap, area, angle, "squareness," etc.) 3 min., 10 min., and one week after the first exposure. Definite asymmetries of the judgment distributions were found; these asymmetries showed a high degree of consistency at the three time intervals. No general tendency toward progressive increase in asymmetry was found. Results which can be interpreted under the laws of *Prägnanz* and closure were obtained in the case of 3 of the 11 characteristics; for the other 8 the results were inconclusive in the absence of further knowledge. The methods of comparison and reproduction are

discussed, with indications of some advantages for the former. The probable basic identity of the problems of the time-error and memory changes is suggested.—*H. W. Karn* (Pittsburgh).

725. Kuroda, R. Discrimination in number given in the form of acoustic sequence in the white rat. *Acta psychol. Keijo*, 1937, 3, 45-53.—10 animals were trained to determine whether they could differentiate one from two, three, four and five, and again five from one, two, three and four in number. A T-shaped control box and a call bell presenting numbers in the form of successive strokes were used. The results obtained show that though one seems to be discriminated with difficulty from two or three, the animals were able to differentiate five from one, two, and three, and some succeeded in the differentiation even between five and four. The choice between right and left which is connected with the discrimination in number cannot be so firmly fixated; it is liable to dissociate, and continuous performance of higher-grade response seems to be difficult. Advantages and disadvantages in connection with a T-shaped control box as an apparatus to test motor discrimination habits have been pointed out.—*R. Kuroda* (Keijo).

726. Léhner, F. A problémamegoldás fázisai. (Phases of problem solving.) *Lélektani Tanulmányok*, 1937, 1, 61-76.—Investigation of the dynamics of the process of thinking is made by means of a stroboscopic phenomenon, which is explained by the 17 subjects. Analysis of the behavior of the subjects results in finding 4 objective and 5 subjective types of behavior. Theories are formulated by practical and rational trial of the possibilities and by criticism, leading to the narrowing of the possibilities. The subjective behavior generally indicates the drive-foundations of the solution of the problem. The work of solution ends in the right solution, which is found partially without and partially with help and is usually accompanied by verificational tendencies. This agrees with the results of Duncker.—*P. Ranschburg* (Budapest).

727. Lough, O. M. A psychological study of functional periodicity. *J. comp. Psychol.*, 1937, 24, 359-368.—96 unmarried students performed a digit-symbol learning test five minutes daily for from 32 to 40 consecutive days. Intelligence and personality tests were also given at intervals during this period. Each of the four phases of the menstrual cycle was compared with each of the other three. The subjects were not told the purpose of the study. Learning progressed during the four phases with no statistically demonstrable differences. Functional periodicity did not affect intelligence scores or neurotic tendencies as measured by the personality tests. Speed of mental functions was not affected by the gynecological periods. Accuracy was reliably increased on the second day of menstruation. "The high relationship between pain and worry on the second day of menstruation appears to be a factor influencing accuracy." Compensation for the distractions of pain and worry is favored as an ex-

planation of this increase in accuracy on the second day. The author concludes that "although the inclination to learn may be affected by the catamenial periods, mental efficiency as measured by correct responses is not affected in subjects of this age and occupation." Bibliography.—*N. L. Munn* (Peabody).

728. Meenes, M. The incidence of eidetic imagery in negro school children. *J. Negro Educ.*, 1937, 6, 592-595.—The author opens the article with a critical discussion of techniques of experimentation and explanations which have been proposed to account for the greater incidence of eidetic imagery in negro subjects. Data are presented from the studies of various investigators to show the frequency of eidetic imagery of white and Mexican children. These data are compared with those obtained in studies by Gill and Hicks, graduate students at Howard University. The conclusion is drawn that "negro school children show a smaller percentage of eidetic ability than is usually reported in investigations on white school children." While there was some indication of a higher incidence of eidetic imagery in lighter than in darker negro children, the author concludes that as yet there is no evidence of racial differences.—*W. E. Walton* (Nebraska).

729. Pear, T. H. The place of imagery in mental processes. *Bull. John Rylands Libr.*, 1937, 21, 3-24.—The writer gives four definitions of image as used by modern writers. The greater part of the paper is devoted to a description and discussion of imagery. This is done by means of written accounts of image trains which are given to show the associations evident in a succession of images and the ways that images aid in thinking.—*F. A. Mote, Jr.* (Brown).

730. Peck, L., & Hodges, A. B. A study of the eidetic imagery of young negro children. *J. Negro Educ.*, 1937, 6, 601-610.—50 negro children ranging in age from three to six, members of an emergency relief nursery, were tested for eidetic imagery and the results compared with those obtained from 50 Mexican children and 208 white children of the same ages. The technique, described previously by one of the authors (Peck) was based upon those of Jaensch, Klüver and Teasdale. The results indicate "a higher incidence and degree of imagery among the negro subjects." The percentages reporting, first, after-images and, second, eidetic images for the three groups are as follows: negro, 100 and 84; Mexican, 92 and 54; white, 86 and 50.9. The negro eidetikers led in duration and richness of detail. Explanations based upon differences in body chemistry and upon differences in interests and play habits are rejected. A brief historical note precedes the description of the experimental work.—*W. E. Walton* (Nebraska).

731. Sartre, J. P. L'imagination. (Imagination.) Paris: Alcan, 1937. Pp. 163. Fr. 10.—The image is a certain type of consciousness; it is an act and not a thing, as it is the consciousness of something.

The following subjects are discussed: the main metaphysical systems of thought regarding imagination; the problem of imagination, with a discussion of the effort of psychologists to find a positive method of approach; the contradictions in the classical concept of imagination; and an exposition of Husserl's concepts.—*M. H. Piéron* (Sorbonne).

732. Selz, O. *Versuche zur Hebung des Intelligenzniveaus*. (Attempts to raise intelligence levels.) *Z. Psychol.*, 1935, 134, 236-302.—The article is subtitled: A contribution to the theory of intelligence, with reference to environmental influences. The author, upon the basis of experimental work done by G. Bauer, G. Sand, J. Andrae, and A. Körber, emphasizes the need of at least three approaches for the accurate determination of intelligence levels in children: (1) objective error analysis, (2) accurate observation of gross behavior in specific situations, and (3) characterological analysis. The experimenters mentioned found that certain aids, e.g. spacing of material, vertical vs. horizontal arrangement, underlining of certain words, etc., greatly affected the scores made on intelligence tests. The basis for the effected change is referable in many cases to specific environmental influences.—*G. F. J. Lehner* (Brown).

733. Takatsuki, R., & Ohtsuka, N. The effect of Panax ginseng extract upon the learning ability of white rats. *Acta psychol. Keijo*, 1936, 2, 143-154.—1% solution of Panax ginseng extract was administered to 10 animals in a test group and water to 10 in a control group. As to food, barley and millet, tomatoes and other vegetables were given to both groups. Three kinds of test were undertaken under indirect illumination with three mazes: a Stone multiple-T maze, a modified form of Lashley's maze, and a reversed form of Stone's maze. The animals were trained to go to the food box for a nibble of biscuit placed there, and their entrance into a blind alley or a retrace on a correct path was counted as an error. The criterion adopted for mastery was 4 correct runs in 5 successive trials. The ginseng effect upon the learning ability is apparently negative, its effect upon the body weight is not clear, its influence upon spontaneous activity could not be determined positively, and there is no noticeable difference between the sexes.—*R. Kuroda* (Keijo).

734. Tinker, M. A. The laboratory course in psychology: III. Human and animal learning in the maze. *J. exp. Psychol.*, 1937, 21, 470-472.—This report is largely a description of mazes which have been used for several years at the University of Minnesota for studying human and animal learning. Included in the account are sets of data obtained with human subjects and rats which may be considered as norms with which to compare individual performance.—*H. W. Karn* (Pittsburgh).

735. Tsang, Y-C. Maze learning in rats hemidecorticated in infancy. *J. comp. Psychol.*, 1937, 24, 221-254.—White rats were hemidecorticated at the age of 22 days and trained on a maze three months later. The aim was to determine the relative

influence upon learning of early and late cerebral injury. Hemidecortication was of six kinds, viz., right or left hemisphere, front or rear halves of both hemispheres, or front of right hemisphere and rear of left hemisphere and vice versa. There were 10-12 rats in each of these groups. 12 additional rats were subjected to partial lesions of the striate cortex. All groups manifested much less retardation than rats subjected to much smaller lesions (7.4 and 24.8%) in adulthood. Diagonal hemidecortication yielded the greatest retardation. This result is attributed to lack of facilitation between the intact (right-front left-rear, and vice versa) areas. Detailed analysis of his results leads the author to conclude in favor of non-localized facilitative functions in addition to specialized ones. He also argues in favor of dynamic patterns, ratios, and relations of excitation instead of neural bonds. The decreased retardation resulting from early as compared with late injury is attributed to the higher plasticity of the infant brain as compared with that of adults. Bibliography.—*N. L. Munn* (Peabody).

736. Weinland, J. D., & Schlauch, W. S. An examination of the computing ability of Mr. Salo Finkelstein. *J. exp. Psychol.*, 1937, 21, 382-402.—The first part of the report is concerned with administration, description of the tests used, and general psychological conclusions. The second section is devoted to a statistical analysis of the correlation of the number of separate acts of attention in tests with time required and with accuracy of performance.—*H. W. Karn* (Pittsburgh).

[See also abstracts 688, 761, 764, 776, 781, 799, 805, 810, 838, 874, 984, 993, 994, 999.]

MOTOR AND GLANDULAR RESPONSES (incl. Emotion, Sleep)

737. Ach, N. *Zur neueren Willenslehre*. (The newer volitional theory.) *Ber. 15. Kongr. dtsch. Ges. Psychol., Jena*, 1936, 125-156.—Motives may be conscious or unconscious, real or imaginary, superficial or profound, subjective or objective, personal or impersonal. Volition becomes more evident as the difficulty to be surmounted increases, and personality differences are clearly expressed in the extent to which the individual is willing to put forth additional effort. Perseverance in accomplishing objectives and in correlating abilities and achievements betrays individual characteristics, as does the extent of the discrepancy in accomplishments constituting "free" and "directed" activities. The duration and direction of motivation and the individual's susceptibility to it allow us to distinguish personality types. Even choices which the person experiences as "free" are causally determined. This freedom of will is no illusion, but a psychological reality, based on our readiness to accept the responsibility for our choices, which is one of the foundations of character.—*H. Beaumont* (Kentucky).

738. Adams, H. F. A statistical analysis of golf. *J. appl. Psychol.*, 1937, 21, 384-395.—Few studies

of skill where the physiological limit has been approached have been undertaken, but the analysis of the golf played by tournament winners presents such an opportunity. Subjects were winners of tournaments since the war for whom complete records are available; the data are made up of the number of strokes taken by the player on each of the holes played. This analysis revealed a characteristic relation between length of hole and number of shots required to play the hole ($r = .62$). Each player has an individual game. The most nearly perfect shot to be expected is one having a deviation of about 5° on either side of the intended line of flight of the ball, inasmuch as the analysis revealed that the usual shot of the tournament player showed such a deviation.—A. B. Blankenship (Psychological Corporation).

739. Avel, M. Analyse expérimentale de la détermination de l'axe dorso-ventral dans la régénération de la tête chez les lombrics. (An experimental analysis of the determination of the dorso-ventral axis in head regeneration in earthworms.) *C. R. Acad. Sci., Paris*, 1937, 205, 255-256.—An experimental analysis of the determination of the dorso-ventral axis in head regeneration in earthworms showed that the establishment of this axis was the result of physiological, not morphological, connections between the different tissues at the base of the insertion.—G. Goldman (Sorbonne).

740. Banus, M. G., & Zetlin, A. The laws determining the relation of isometric tension to length in skeletal muscle. *Amer. J. Physiol.*, 1937, 119, 264-265.—"Earlier investigations have indicated that the relation of isometrically developed tension to length in skeletal muscle obeys the following rules: the initial tension follows a hyperbola-like curve; the total tension follows Blix's S curve, while the developed tension follows a curve with a maximum. . . . In view of these facts, the following laws are tentatively suggested: the initial tension is an exponential function of the length; the total tension is a straight line function to a maximum, then remains constant; the developed tension is a mathematical consequence of the above two laws."—T. W. Forbes (Harvard Bureau for Traffic Research).

741. Barmack, J. E. Boredom and other factors in the physiology of mental effort: an exploratory study. *Arch. Psychol., N. Y.*, 1937, No. 218. Pp. 83.—Oxygen consumption, systolic and diastolic blood pressure, and heart rate changes were studied together with changes in subjective reports of bored-interested, irritated-pleased, peppy-fatigued, relaxed-strained, attentive-inattentive, sleepy-awake, estimation of time, and percent of time spent in daydreaming during work expected to be interesting versus work expected to be boring. A rather wide range of individual differences in attitude was obtained, making the number of subjects inadequate for statistical reliability. The findings of other investigators that output on a heterogeneous task tends to increase and output on a homogeneous task tends to decrease are supported by the data.

Further work is necessary.—E. M. Achilles (Columbia).

742. Berkson, J., & Boothby, W. M. The variability of the energy of metabolism in normal individuals. *Amer. J. Physiol.*, 1937, 119, 271-272.—"Each individual's series was studied separately and all were combined to give a composite picture of the distribution of repeated determinations of the same individual. These results, studied together with those for the total variability, enabled us to evaluate the interindividual variability."—T. W. Forbes (Harvard Bureau for Traffic Research).

743. Bognár, C. Kísérletek a tájékozódásról. (Experiments on orientation.) *Lélektani Tanulmányok*, 1937, 1, 48-53.—62 middle-school students, about 12 years old, and 24 high-school students, 18 to 20 years old, were asked to draw sketches of the location of (1) the Danube, (2) a bridge in Budapest, (3) four main streets of Budapest. Four types of solution were found: (1) approximately correct; (2) the directions simplified in two dimensions; (3) the directions tending to diverge out of a center; (4) relatively correct only with reference to the chief landmark, the Danube inverted 90° . The illusions are often persistent, even when opposed by the actual realities. The first and fourth solutions were found more frequently with younger, the second and third with older pupils.—P. Ranschburg (Budapest).

744. Bordás, S. Ergometrographische Untersuchungen der Arbeitsleistung von Rechts- und Linkshändern. (Ergometrographic investigations of work performance in right- and left-handed persons.) *Arbeitsphysiologie*, 1937, 9, 550-561.—R. R. Willoughby (Brown).

745. Britton, S. W., & Silvette, H. Extremely prolonged survival of marmots after nephrectomy or adrenalectomy. *Amer. J. Physiol.*, 1937, 119, 276-277.—"The marmot has been found to be able to withstand bilateral nephrectomy or adrenalectomy for extremely long periods. The phenomenon is observed during the winter months only but is not explicable on the basis of hibernation, since this animal under laboratory conditions is normally active throughout the year. . . . A number of chemical changes in blood and tissues have been observed under the above conditions, and comparison made with the reactions found in other species."—T. W. Forbes (Harvard Bureau for Traffic Research).

746. Buxton, C. E. A comparison of preference and motor-learning measures of handedness. *J. exp. Psychol.*, 1937, 21, 464-469.—Manual-skill measures of handedness proposed by Beck (*J. Psychol.*, 1936, 2, 259-272) were compared with a battery of preference tests to determine whether or not the same principal function (laterality, or dominance) was tested by each type of test. The preference measures, which included throwing, near and far reaching for objects, and brushing imaginary lint from clothing, intercorrelated at a level interpreted as showing some common determiners, assumed to be laterality of function.

The motor-skill measures did not correlate closely enough with each other or with the preference tests to indicate significant communality. However, when each of the two batteries was pooled the correlation between them was .45, indicating that in a general way the tests were sampling similar behavior; but this level of correlation certainly does not permit substitution of either battery of tests for the other.—*H. W. Karn* (Pittsburgh).

747. Churney, L., & Klein, H. M. The electrical charge on nuclear constituents. *Biol. Bull. Woods Hole*, 1937, 72, 384-388.—In the salivary gland cells of *Sciara coprophila* the nucleus as a whole is positively charged, while the chromosomes within it are negatively charged. The complexity of the living system with respect to the electrical charge of cell components is contrasted with the apparent simplicity of inanimate systems.—*W. J. Brogden* (Johns Hopkins).

748. Comroe, J. H., & Schmidt, C. F. Reflexes from the carotid body (glomus caroticum) to the respiratory center of the dog. *Amer. J. Physiol.*, 1937, 119, 290.—"Conclusions: (1) reflexes aroused in carotid by chemical agents originate entirely in glomus caroticum; (2) receptors are sensitive both to oxygen lack and carbon dioxide excess; (3) hyperpnea of carbon dioxide and acid excess is much more central than reflex, anoxic hyperpnea mainly or entirely reflex."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

749. Dragstedt, L. R., Van Prohaska, J., & Harms, H. P. The effect of the continuous injection of epinephrine on the blood pressure. *Amer. J. Physiol.*, 1937, 119, 298.—"It is concluded that whereas a moderately long continued hypertension may be produced by the continuous injection of epinephrine, the amount required is sufficient to produce other specific systemic effects which are usually fatal."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

750. Fenn, W. O. Factors affecting the loss of potassium from muscles on stimulation. *Amer. J. Physiol.*, 1937, 119, 307.—"The loss of potassium (per gram dry weight of muscle) in exchange for sodium as a result of indirect stimulation for 30 minutes has been confirmed in decerebrate and in anesthetized cats (Dial). Little or no change in potassium content of the blood is observed. The loss of potassium from muscle is greater if the muscle contracts isometrically than if the tendons are cut; it is greater if the circulation is good than when the animal is overanesthetized or moribund. . . . During recovery, potassium returns to the muscle which lost it during stimulation. Rat muscles lose potassium after prolonged and vigorous exercise by swimming in a waterbath as compared with the denervated control muscles. Frog muscles can now be shown to lose potassium if stimulated for periods of one hour or more without excessive fatigue."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

751. Galapeaux, E. A., & Templeton, R. D. The influence of filling the stomach on colon motility in

the dog. *Amer. J. Physiol.*, 1937, 119, 312-313.—"The term 'feeding reflex' has been offered by Welch and Plant as a substitute for the more commonly used term 'gastro-colic reflex.' Their suggestion is based upon experiments in which no increase in colon motility was observed associated with filling the stomach by way of a gastrotomy, but an increase was observed when food was eaten. Our investigations were conducted on trained dogs on which cecostomies had been performed several months prior to this study. . . . A comparison of the quantity of activity in the second 200 minutes to that obtained in the first 200 minutes revealed an augmentation beginning shortly after the stomach was filled and increasing progressively to the end of the tracing. These experiments are not concerned with the existence of a 'feeding reflex,' but present evidence that the term cannot be substituted, as suggested by Welch and Plant, for the term 'gastro-colic reflex.'—*T. W. Forbes* (Harvard Bureau for Traffic Research).

752. Gantt, W. H. The nervous secretion of saliva: quantitative studies in the natural unconditioned reflex secretion of parotid saliva. *Amer. J. Physiol.*, 1937, 119, 493-507.—Pavlov showed that the secretion of stomach and pancreas was directly proportional to weight of the food ingested, but no such work has been done on the parotid or submaxillary. 8000 measurements were made on 12 dogs over a period of five years, using a parotid fistula of the left gland. Dogs were fed in a conditioned-response chamber. Secretion was found to be a straight-line function of the amount of food, as given by the equation $S = a + bQ$, where S = number of cc. of saliva, a and b are constants proportional to body weight, and Q = amount of food. The secretion of saliva for a given amount of food per kilogram of body weight was remarkably constant for different dogs. Rate of eating had only a slight effect. With 5 dogs a preceding conditioned signal was used, or a combination of this and the no-signal method. In these cases only the "part of the CR after eating begins" was used.—*T. W. Forbes* (Harvard Bureau for Traffic Research).

753. Gardiner, H. M., Metcalf, R. C., & Beebe-Center, J. G. *Feeling and emotion*. New York: American Book, 1937. Pp. 445. \$4.00.—This book of 11 chapters, the first 8 and part of the 9th written by Gardiner and revised and completed by Metcalf, and the last 2 written by Beebe-Center, constitutes a historical and critical study of the theories of feeling and emotion developed from the time of the Greeks to the present century. Some of the chapters are: "The beginnings of a doctrine of the affections: from Heraclitus to Plato"; "The doctrine of pleasure, pain, and emotion in Aristotle"; "Ancient theories of the affections"; "Patristic and medieval doctrines of the affections"; "Affective psychology in the period of the renaissance"; "Systems of the 'passions' in the seventeenth century"; "Affective psychology in the nineteenth century"; and "Affective psychology in the twentieth century".

century." The general conclusion reached is that, from the psychophysiological theory involving correlation between consciousness and the physiological organism and the behavioristic theory involving the correlation of forms of behavior with processes within the organism, a trend has developed toward an organic point of view rendering the theory of emotion "a matter of organic function, of correlation (and causation) within the organism, not between it and an external realm of consciousness or behavior." A 23-page bibliography and a 35-page index of names and subjects are appended.—*M. H. Erickson* (Eloise Hospital).

754. Garrey, W. E. Action of acetylcholine on cultures of chick heart. *Amer. J. Physiol.*, 1937, 119, 314.—"Preliminary experiments indicate that beating heart muscles of the chick developing in tissue cultures and therefore free from vagal inhibitory influences are not inhibited by acetylcholine in any physiological concentrations, even when eserine is present."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

755. Garrey, W. E., & Chastain, L. L. Acetylcholine action on the turtle heart. *Amer. J. Physiol.*, 1937, 119, 314-315.—"Confirming our report to the Circulation Section in 1936, acetylcholine and related choline derivatives are without inhibitory effects on the ventricular muscle of the turtle heart which is devoid of all direct vagus influences."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

756. Gellhorn, E. On the mechanism by which carbon dioxide offsets the effect of oxygen deficiency. *Amer. J. Physiol.*, 1937, 119, 316.—"In previous experiments it was found that 3% carbon dioxide offsets the effect of 8 to 8½% oxygen in man in regard to various cortical processes. To elucidate the mechanism involved blood pressure and temperature studies were carried out in man and animals. Significant differences in the blood pressure under conditions of oxygen deficiency with and without carbon dioxide were obtained in erect posture in the human. . . . Furthermore, it is found that the fall in body temperature of rats exposed to low oxygen tension in the air is greater in the presence of 3% carbon dioxide than in its absence. The restoration of circulation and the decreased oxygen demands of the tissues by the lowering of the body temperature are considered to be essential regulatory adjustments by which carbon dioxide offsets oxygen deficiency."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

757. Gesell, R., & White, F. The recruitment of inspiratory and expiratory mechanical energy in hyperpnea produced by the administration of sodium cyanide. *Amer. J. Physiol.*, 1937, 119, 317.—"This subject was studied to determine the degree of reciprocal grading of activation of antagonistic respiratory muscles. Action potentials of the important respiratory muscles provided the index of intensity of contractions. Intravenous injection of NaCN sufficient to increase pulmonary ventilation 4- to 6-fold produced varying results.

. . . Reciprocal grading of inspiratory and expiratory phasic contraction is a poorly developed integration of the central respiratory mechanism of the dog. The inspiratory side of this mechanism is more accessible to chemical stimulation than is the expiratory side. Respiration is largely an inspiratory act which provides expiratory energy by mechanical stretching of the torso and lungs, even during moderate hyperpnea. When purely inspiratory it approaches in function the simple pulsatile characteristics of the heart."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

758. Guttman, S. A., Horton, R. G., & Wilber, D. T. Enhancement of muscle contraction after tetanus. *Amer. J. Physiol.*, 1937, 119, 463-473.—Details are given of a phenomenon previously reported in preliminary fashion. It was found that if a low rate of stimulation was followed by a high rate, a return to the low rate brought an enhancement of the muscular response. Frog sciatic-gastrocnemius preparation was used with maximum break shocks at 1 and 10 per second. The enhancement disappeared with rest, and therefore was not necessarily used up by contraction. Rest alone after fatigue produced some enhancement, but was not as effective as change of frequency. It is therefore not merely a recovery phenomenon. Earlier in the fatigue process a higher frequency is necessary to produce the enhancement. Higher frequencies up to 30 per second and longer durations produced greater enhancement. A similar effect was obtained from a human subject working a finger ergograph at 1 per second. Enhancement was produced after holding the weight high for 5 seconds. Eserine abolished the enhancement, and atropine decreased both contraction and enhancement. Sympathectomy did not affect the phenomenon. An attempt to potentiate with cocaine produced a questionable increase of the first few contractions of the enhancement, thus allowing some possibility that adrenalin is concerned. It is concluded that the effect is due to a chemical mediator in tetanus at the myoneural junction and that the mediator may be either acetylcholine or adrenalin.—*T. W. Forbes* (Harvard Bureau for Traffic Research).

759. Guttman, E., & Sargent, W. Observations on benzedrine. *Brit. med. J.*, 1937, Part 1, 1013-1015.—A report on the psychological and cardiovascular reactions of 250 normal and psychotic hospital patients to benzedrine.—*W. J. Brogden* (Johns Hopkins).

760. Haldi, J., Bachmann, G., Ensor, C., & Wynn, W. Muscular efficiency as affected by taking breakfast and by the height of the respiratory quotient immediately before exercise. *Amer. J. Physiol.*, 1937, 119, 323-324.—"Haggard and Greenberg recently reported a much higher muscular efficiency after breakfast than in the fasting state. They believe that there is a direct relationship between muscular efficiency and the level of the respiratory quotient before exercise. In studying the metabolism of glucose and of fructose we have observed that

these sugars taken immediately or thirty minutes before exercise had no appreciable effect on muscular efficiency. In view of these apparently contradictory results we have conducted several experiments under conditions comparable to those of the experiments of the above investigators. . . . Muscular efficiency therefore was not increased by taking breakfast nor could it be correlated with the respiratory quotient obtained immediately before exercise."—T. W. Forbes (Harvard Bureau for Traffic Research).

761. Hall, C. S. Emotional behavior in the rat. IV. The relationship between emotionality and stereotyping of behavior. *J. comp. Psychol.*, 1937, 24, 369-375.—43 white rats were confronted by five routes to food. The paths were of equal length, contained equivalent food-incentives, etc. 50 choices for a given rat were distributed according to the path selected. Then the S. D. of the differences between the observed and a theoretical chance distribution was obtained. This S. D. was regarded as an index of stereotyping. The incidence of defecation was used as a measure of emotionality. Emotional rats manifested greater variability than the relatively non-emotional animals. After a theoretical discussion and review of previous data, the author reaches the following hypothesis: "If an emotional stimulus can be avoided immediately through directed activity, stereotyping of behavior will result; if an emotional stimulus cannot be avoided directly, variable behavior will occur."—N. L. Munn (Peabody).

762. Hellebrandt, F. A., Braun, G., & Tepper, R. H. The relation of the center of gravity to the base of support in stance. *Amer. J. Physiol.*, 1937, 119, 331-332.—"Observations thus far made on 60 normal subjects of both sexes ranging in age from the first to the seventh decade indicate that sway is inseparable from the vertical stance. It varies in magnitude. The average shift of the center of gravity is confined to a relatively small fraction of the total area of underpropping. . . . It is suggested that the incessant shift of the center of gravity may serve as a constantly varying stimulus flowing over the afferent limb of the geotropic reflex and that herein may reside the mechanism for the functional rotation of motor units conceded to be responsible for the relative indefatigability and economy of postural tone."—T. W. Forbes (Harvard Bureau for Traffic Research).

763. Hellpach, W. Gemütsart und Gemütswechsel als erscheinungsformende Kräfte. (Disposition and emotional changes as factors influencing appearance.) *Ber. 16. Kongr. dtsch. Ges. Psychol., Jena, 1936*, 114-122.—Emotional experiences frequently alter the individual's appearance and manners. Intense emotion may cause a relatively youthful person to age considerably in a short period. The individual's "normal" disposition is determined to a large extent by his environment (southern as compared to northern races). These factors should be considered carefully in connection with vocational guidance. At most, 35% of our employable population can enter profes-

sional work; the others must find emotional outlets and training outside of their occupation. These are supplied by sports like football and boxing, which used to be unpopular in Germany before the war, but now are encouraged by the authorities because they fill an essential need in the development of the personalities of the majority of citizens.—H. Beaumont (Kentucky).

764. Hippus, R. Gefühl und Denken. (Emotion and thinking.) *Ber. 16. Kongr. dtsch. Ges. Psychol., Jena, 1936*, 52-65.—An analysis of the higher processes of perception and thought shows that emotions play an important functional part in them, not in the form of secondary feelings or affective attitudes, but of insight. Only by this means can the individual establish contact with external events. In insight, as in all intense emotions, the original object and the personal element cease to exist (extreme joy, profound concentration) and make place for an expansion of the ego to include external events. Real, deep thinking is closely allied with emotion, because the sincere investigator must so devote himself to his task as to exceed the limitations of his personality.—H. Beaumont (Kentucky).

765. Hitchcock, F. A., & Grubbs, R. C. The effect of adrenal cortical extract on the respiratory metabolism of normal human beings under various conditions. *Amer. J. Physiol.*, 1937, 119, 336-337.—"The respiratory exchanges of 11 normal human beings (8 males and 3 females) have been determined by means of the Tissot-Haldane technic while the subjects were (1) in a basal condition, (2) standing erect, and (3) walking on a treadmill at a uniform rate. Experiments were carried out before, during and after the administration of relatively large amounts of adrenal cortical extract. The results indicate that adrenal cortical extract in sufficiently large doses tends to reduce the oxygen consumption of normal human beings. . . . The average decrease for the entire group was about 14 per cent."—T. W. Forbes (Harvard Bureau for Traffic Research).

766. Horton, R. G., Wilber, D. T., & Guttman, S. A. The enhancement of muscular contraction after tetanus. *Amer. J. Physiol.*, 1937, 119, 338-339.—"Neurohumoral action furnishes an explanation for the following results obtained from an isolated nerve-muscle preparation. If a sciatic-gastrocnemius preparation of frog (or cat), which has been partially fatigued by single stimuli repeated 1/sec., is stimulated for a short period (5 sec.) at a higher rate (20/sec.), on return to stimulation at 1/sec. the contractions are much larger than before tetanizing; i.e., they are 'enhanced.' Since myoneural fatigue is assumed to occur before muscular fatigue, it seems probable that the recovery is concerned with myoneural junction. This is substantiated by the fact that curare abolishes the phenomenon with direct stimulation. . . . Since the phenomenon appears equally well after sympathetic degeneration the Orbelli mechanism is not involved. Possible mediators of this effect are acetylcholine or an

adrenaline-like substance from some other mechanism than the sympathetic nerves."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

767. Ivy, A. C., & Schnedorf, J. G. On the hypnotoxin theory of sleep. *Amer. J. Physiol.*, 1937, 119, 342.—"The hypnotoxin theory of sleep was advanced by Piéron. His best point of evidence was obtained by removing cerebrospinal fluid from a fatigued animal and injecting it intraventricularly into a normal animal. The injected animal became drowsy and fell 'asleep.' We have kept twelve animals awake in the standing position for seven or more days. Eight centimeters of cerebrospinal fluid were withdrawn aseptically by cisternal puncture from normal dogs and replaced by 8 cc. of fluid from the sleep-deprived dogs (fatigue fluid). In from 15 to 30 minutes the dogs became drowsy, and were markedly depressed in from 1 to 2 hours after the injection. . . . Among other observations we found that the body temperature of the dogs receiving the 'fatigue fluid' rose on the average 2.6 degrees F. (no panting) and that the rise and fall in temperature corresponded to the onset and remission of the depression. . . . Of 42 control animals receiving normal fluid or sodium chloride all showed an elevation of temperature and all but 2 were depressed. However, none of them became as depressed as 3 of the 12 animals which received 'fatigue fluid.' Thus we have confirmed Piéron's observation, but cannot confirm his interpretation unequivocally until a way is found to administer the 'fatigue fluid' without causing a significant rise in body temperature."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

768. Jaensch, E. Gefühl und Empfindung. (Emotion and perception.) *Ber. 15. Kongr. dtsch. Ges. Psychol.*, Jena, 1936, 65-70.—In previous investigations the author has discovered the close connection between the red-green color blind who are more sensitive to colors on the right side of the spectrum and persons with normal vision whose green discrimination is more pronounced on the one hand, and the red-green color blind especially sensitive to colors on the left side of the spectrum and "normal" persons with pronounced red discrimination on the other. The former group presented certain personality differences when compared to the latter, and their emotions were so closely allied with their perception that they were sometimes substituted for it. Emotional factors determine which colors are most easily perceived, and personality and racial types can be distinguished on this basis. Nordics prefer blue and green (the colder colors), Mediterranean types red and yellow (the warmer colors).—*H. Beaumont* (Kentucky).

769. Kalmus, H. Über die dynamische Erhaltung der Höhenlage durch die Sprungbewegungen der Larven und Puppen von *Corethra*. (Concerning the active maintenance of a suspended position by larvae and pupae of *Corethra* by means of jumping movements.) *Z. vergl. Physiol.*, 1936, 23, 651-662.—Two independently functioning mechanisms enable the "phantom" larva and the pupa of this culicid

dipteran to remain poised at a given depth in the water. The first is a static function performed by the air sacs, effecting an adjustment to water pressure in dependence upon body weight. The second is a dynamic function, through rhythmic contractile movements of the appendages (i.e. "springing" in the larva, "somersaults" in the pupa). These movements differ according to the intensity of stimulation on sense hairs through current changes and through the insect's own movements. Water pressure indirectly causes active movements, by effecting passive shifts in position and thereby effecting stimulation of cutaneous receptors.—*T. C. Schneirla* (New York University).

770. Krueger, F. Der strukturelle Grund des Fühlens und des Wollens. (The structural basis of emotion and volition.) *Ber. 15. Kongr. dtsch. Ges. Psychol.*, Jena, 1936, 181-189.—Volitional processes always contain emotional elements (but this statement cannot be converted), they are directed towards an objective, and they are articulate. Only emotions which are relatively recent in origin are articulate (those experienced in connection with a work of art or moral consciousness). Functionally, emotions become dulled by repetition, which is not true of volition, though the latter may become more habitual. The relation between emotion and volition forms the core of personality. Man as a social being is bound to his family and his race by emotional ties, to various organizations, clubs, unions, etc. by volitional ties. To understand him as a member of his group, we must consider these two aspects of his being as of equal significance.—*H. Beaumont* (Kentucky).

771. Landis, C. Abnormalities of the startle pattern. *Amer. J. Physiol.*, 1937, 119, 357.—"Within one-half second after the sound of a pistol shot a clear, unmistakable, immediate, stable, reflex pattern of response may be regularly obtained in monkeys, apes, infants, children and normal adult human beings. This 'startle pattern' is best demonstrated by ultra-rapid cinematography (64 to 2400 exposures per second). The main features of the pattern are shutting the eyes, a characteristic distortion of the features, forward movement of the head, raising and drawing forward of the shoulders, abduction of the upper arms, bending of the elbows, pronation of the forearms, claspings of the hands, forward movement of the trunk, contraction of the abdomen, and bending of the knees. The pattern varies in degree of manifestation among individuals and in any one individual from time to time, but its general outline is uniform for all normal subjects. Extension of this investigation to psychopathological and neurological patients brought out the following facts. (1) The pattern is not altered in the manic-depressive psychosis, involutional melancholia, alcoholism or general senility. (2) Many catatonic schizophrenic patients show a gross exaggeration of the pattern. (3) The pattern is usually diminished in general paresis. (4) One-fourth of epileptics fail to show any element of the pattern."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

772. Landis, C., & Hunt, W. A. The startle pattern. The startle pattern in psychopathological patients. *Amer. J. Physiol.*, 1937, 119, 358.—"Two twelve minute motion picture presentations showing the nature of the immediate pattern of response to the sound of a pistol shot."—T. W. Forbes (Harvard Bureau for Traffic Research).

773. Leblond, C. P., & Nelson, W. B. Présence d'instinct maternel sans stimulation hormonale. (The presence of the maternal instinct without hormonal stimulation.) *C. R. Soc. Biol., Paris*, 1937, 124, 1064-1066.—The maternal instinct seems to be determined by the hormonal stimulation of a nerve center which is located in the corpus striatum. However, the authors obtained signs of the maternal instinct in mice in which all possibility of hormonal action from the hypophysis had been eliminated by means of a hypophysectomy. The experiment consisted in contact with newly born mice left in the cages of the subjects for periods varying from one to six days.—M. H. Piéron (Sorbonne).

774. Leese, C. E., & Fogelberg, A. Further evidence for the indirect control of skeletal muscle tone and fatigue by the autonomic nervous system. *Amer. J. Physiol.*, 1937, 119, 359-360.—"The authors have shown that there occurs, with the use of bulbocapnine in several species, a peripheral circulatory change which is associated with a decrease in skeletal muscle tone and rapid onset of fatigue. Studies . . . show that the abnormal skeletal muscle behavior in bulbocapnine catatonias depends largely upon the mechanisms controlling peripheral vascularity. . . . The vascular responses to adrenin, acetyl-beta-methyl choline chloride, pitressin and histamine suggest a decreased irritability of the peripheral vasomotor mechanism in animals intoxicated with bulbocapnine."—T. W. Forbes (Harvard Bureau for Traffic Research).

775. Lhermitte, J., & Bineau, —. De l'influence de la qualité des émotions sur le déclenchement des attaques de cataplexie. (On the influence of the quality of emotions on the release of cataplectic attacks.) *Rev. neurol.*, 1936, 5, 584-587.—When emotion is considered as a pathogenic factor of pathological disturbance, it is convenient to discriminate between shock emotion, which acts by means of mass effect, and a modified emotion, the reverberations of which are governed by the affective shades which assimilate to themselves the process of the emotion itself. This is true in cataplexy and narcolepsy as well as in many other neuroses.—M. H. Piéron (Sorbonne).

776. Linke, P. Wille, Erkenntnis und Auxiliarmotiv. (Volition, cognition and the auxiliary motive.) *Ber. 15. Kongr. deutsch. Ges. Psychol., Jena*, 1936, 160-164.—When nothing indicates the direction in which a rational solution to a problem must be sought, we have to avail ourselves of any means, however irrational, that presents itself. In its purest form this means a chance decision (auxiliary motive). The author maintains that all real motives must of necessity be irrational (non-rational, hence

emotional), whereas the so-called rational motives are really no motives at all, but cognitive processes, depending entirely on reasoning.—H. Beaumont (Kentucky).

777. Little, G. A., & Cameron, D. E. The effects of theelin on anxiety. *Canad. med. Ass. J.*, 1937, 37, 144-150.—R. R. Willoughby (Brown).

778. Maaske, C. A., Krasno, M. R., & Eyster, J. A. E. Action potentials from the gastrocnemius muscle of the frog. *Amer. J. Physiol.*, 1937, 119, 365.—"Previous work from this laboratory has shown that the potential time curves recorded from a circular conducting field around the frog's gastrocnemius muscle result from two coaxial dipoles, oriented along the long axis of the muscle. The present work considers in more detail the position of the dipoles in the muscle, their approximate length and whether they are to be regarded as stationary or in motion. . . . By plotting the two maxima of the action potentials against distance along the muscle, it was found that the potential distribution in the muscle corresponds to two effective dipoles. The distance between positive and negative charges (length of dipole) is approximately 7 to 9 mm. while the proximal charges lie about six millimeters from the femoral end of the muscle. These two 'effective' stationary dipoles may result from two sets of dipoles moving in opposite directions from a certain point in the muscle. Investigations in this connection are being continued."—T. W. Forbes (Harvard Bureau for Traffic Research).

779. Mall, G. D. Körperliche Begleiterscheinungen affektiver Zustände. (Physical concomitants of affective conditions.) *Ber. 15. Kongr. deutsch. Ges. Psychol., Jena*, 1936, 98-102.—Numerous measurements of vegetative functions during emotional situations were made, including pulse beat, blood pressure, breathing rate, muscular tonus, skin tension, skin temperature, psychogalvanic reflex and pupillary movements. These functions were rather tense when the individual became absorbed in complex mental activities, but this condition was superseded by one of relaxation in which the person became introvertedly engrossed in his task. Blood pressure and pulse beat decreased, reflexes were slower. Productivity became lower and the individual irritable. Unless external stimulation was provided, this condition resulted in a state of unrest. Introverted and extraverted attitudes were found to predominate in alternation in the same subjects, and personality types differed in the tempo with which one state replaced the other rather than in a continued dominance of either state.—H. Beaumont (Kentucky).

780. Martin, S. J., & Marcellus, F. S. Plethysmographic studies with special reference to waves of respiration. *Amer. J. Physiol.*, 1937, 119, 373-374.—"A definite correlation exists between increase in plethysmographic volume of the paw and phases of respiration. No change is noted upon the normal appearance or character of these respiratory waves after clamping the femoral or common iliac veins,

sectioning of the femoral and sciatic nerves, transectioning the spinal cord at the twelfth dorsal and first lumbar region and after the interposition of a glass cannula between the proximal and distal cut ends of the common iliac artery. These waves were still visible in a pulseless and recently dead animal under artificial respiration. However, the respiratory waves disappeared promptly upon clamping the femoral or common iliac arteries or when artificial respiration was temporarily stopped; they reappeared in normal character when the clamps were removed or artificial respiration re-instituted. From these experiments, it appears that the mechanical or hydrostatic factor is partly responsible for the respiratory waves in plethysmographic records of the paw in cats and dogs.—*T. W. Forbes* (Harvard Bureau for Traffic Research).

781. Max, L. W. Experimental study of the motor theory of consciousness. IV. Action-current responses in the deaf during awakening, kinaesthetic imagery and abstract thinking. *J. comp. Psychol.*, 1937, 24, 301-344.—"Since various motor theories stress the importance of linguistic mechanisms as the seat of motor activity during consciousness, and since the arms and fingers of the deaf are the locus of their oral, written, and gestural speech, the present investigation studied action-current responses from the flexores digitorum of the deaf during awakening and during the solution of simple and complex thought problems. . . . As a control, similar records were taken from the leg muscles of the deaf, from the tongue and from the arm muscles of hearing subjects." Silent reading, memorizing, implicit repetition of verbal materials, implicit rearrangement of mixed sentences, counting silently, mental addition, etc., were accompanied by peripheral action currents in most subjects. It is the author's tentative conclusion that these responses have some relation to the thought processes, being more than "adventitious effects of irradiated tensions." All of the problems are presented in an appendix. Typical records are reproduced. Bibliography.—*N. L. Munn* (Peabody).

782. Ombrédane, A. Contribution à l'étude de la conduite passionnelle. (A contribution to the study of passionate conduct.) *J. Psychol. norm. path.*, 1937, 34, 215-265.—Crimes of passion have led physicians and jurists to express diverse and even contradictory judgments of what constitutes passion. Clinical psychiatrists and psychologists also do not agree on definitions in this field. The author reviews the history of the concept of passion from the Stoics to contemporary psychologists. He says that one must, in particular, distinguish the types of passionate conduct of the maniac, the paranoiac, and the schizophrenic characters. The first is more sudden, less organized, less stable, less durable; the second has a longer preparatory period, is better organized, more rigid, more stable; and the third is more discordant, less aggressive, and more subject to the mutations of the patient's nature. The author discusses in great detail two cases of the first type.—*R. E. Perl* (New York City).

783. Pedersen, V. C. Insomnia from another point of view. *Med. Rec.*, N. Y., 246, 10, 434-438.—Insomnia constitutes a symptom manifested as actual sleeplessness or lack of restful sleep, arising from organic, toxic, circulatory or psychic disturbances, and marked by subjective distress and objective evidence of lack of sleep. Prognosis depends upon the cause, and treatment lies in general hygienic and dietary measures and hydrotherapy, with medicinal aids as last resorts.—*M. H. Erickson* (Eloise Hospital).

784. Porter, E. L., & Blair, R. K. Spread of reflex action in the spinal cat following intravenous injection of sodium cyanide. *Amer. J. Physiol.*, 1937, 119, 386.—"The tenuissimus muscle in the cat is long and slender and innervated by a comparatively few motor fibers. It contracts as a part of the flexion reflex in the spinal cat and will respond to single shocks applied to the posterior tibial nerve. . . . If 0.5 mgm. per kgm. of sodium cyanide is injected rapidly into the jugular vein there appears after a latent period of some 40 seconds the contraction of one to several more motor units than were in activity before the injection. If now the stimulation to the sensory nerve be discontinued, no contractions at all occur, indicating that the phenomenon is to be interpreted as a spread of reflex activity, and not as excitation independent of sensory stimuli."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

785. Prosser, C. L., & Young, J. Z. Responses of muscles of the squid to repetitive stimulation of the giant nerve fibers. *Biol. Bull. Woods Hole*, 1937, 73, 237-241.—With increasing frequency of stimulation of a giant nerve fiber in the squid *Loligo pealii*, the only increase in tension developed by the circular muscle fibers of the mantle is a small amount (5 to 10%) over the range of incomplete relaxation. In the fresh muscle a single nerve impulse is capable of activating every muscle fiber it reaches; the isolated muscle is readily fatigued when stimulated at high frequency, and thereafter greater tension is produced at the higher rates.—*W. J. Brogden* (Johns Hopkins).

786. Reich, W. Orgasmusreflex, Muskelhaltung und Körperausdruck. (Orgasm reflex, muscular attitude and physical expression.) *Abh. person. Sexualök.*, 1937, No. 5, 5-49.—Reich's thesis is that psychic energy depends on vegetative sexual energy. Psychic structure is an acquired vegetative attitude, and characterological and muscular defense are identical, being adopted in childhood to repress hate or sexuality. Psychopathic conditions are expressions of chronic vegetative disequilibrium, ranging from the superficial rigidity of neuroses to deep penetrations of the defense into the organism, in which the only solutions are outbursts of rage or complete vegetative devastation. Reich's vegetotherapy consists in direct mobilization of muscular tensions with reconstruction of the vegetative forces and characterological attitudes. Resolution of a muscular tension automatically and immediately reproduces the original situation. He discusses body

attitudes in relation to the orgasm reflex or defense against it by blocking at the levels of different muscle groups; the technique of its release; and the physical symptoms, character traits and disturbed ego-feelings associated with defense. Among the cultural problems brought up by his thesis are the ascetic religions; yoga; the civilizations which inculcate emotional repression; and military bearing and drill as deliberately imposed devices for annihilating emotion, initiative and individuality.—*M. E. Morse* (Baltimore).

787. Rosenblueth, A., & Morison, R. S. Curarization, fatigue and Wedensky inhibition. *Amer. J. Physiol.*, 1937, 119, 236-256.—An original attempt to explain why acetylcholine depression changes the potentiation after curare gave results which led to the present attempt to explain the three muscular phenomena of curarization, fatigue, and inhibition in terms of the chemical mediator theory. Wedensky inhibition occurred in unfatigued muscle at a high frequency of stimulation. Eserine, acetylcholine, and potassium produced either an increase or decrease of muscular response depending on rate of muscle stimulation and fatigue. Eserine and curare favored inhibition, but their effects canceled. Acetylcholine disinhibited curarized preparations but increased eserine depression. All of these effects are explained if acetylcholine is the mediator to the muscle. Results favor the view that fatigue is a decline of quanta of acetylcholine from the nerve impulse, whereas curare produces a similar effect by raising the threshold. However, inhibition also occurred from excess of acetylcholine, and therefore inhibition of this type should be differentiated from fatigue or the curarized state. It is held that the electrical transmission theory does not account for these data. A post-tetanic augmentation of muscular response occurred which was probably due to potassium. A contraction was found which succeeds a brief tetanus after eserine and which may be the contraction which might be expected when an excess of acetylcholine again reaches the excitation threshold. As such it would be of importance for the theory of chemical mediation.—*T. W. Forbes* (Harvard Bureau for Traffic Research).

788. Rubenstein, B. The constancy of basal metabolism and pulse rate in relation to body temperature and the menstrual cycle. *Amer. J. Physiol.*, 1937, 119, 393-394.—"We now present evidence that the BMR of normal women fluctuates 10 to 20% (while the BMR of males varies only 3%) with an average day-to-day change of $\pm 5\%$. . . Since BMR normally keeps pace with heat dissipation which is under control of the autonomic nervous system; and since the heart-rate, too, is an expression of the autonomic balance, we suggest that the stability of the BMR and pulse rate is a good index of autonomic stability. We also suggest that the low temperature phase of the menstrual cycle is a period of least homeostasis."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

789. Rudert, J. Über die Erfüllung von Aufgaben. (Completing a task.) *Ber. 15. Kongr. dtsh. Ges. Psychol., Jena*, 1936, 165-168.—An analysis of the volitional process, based on a series of experiments with puzzles. Motivating forces are: the necessity of completing the task, and interest in the performance itself. The aspect of the volitional process changed repeatedly and varied from one subject to another. Many began by playfully integrating themselves with the task, but later found it necessary to bring about a separation for the purpose of making a careful examination. This often turned their attitude into one of animosity (emotional fixation). Frequently self-restraint was necessary to proceed rationally and to counteract the desire to find a quick solution. Self-restraint was used also to check emotional outbursts; some subjects scolded themselves, others silenced themselves. Confidence and fear were at first mixed somewhat diffusely in the subjects' attitudes, but later became clearly segregated when triumphant certainty and disappointed depression were alternating moods. A successful solution did not resolve the relation between the subject and his task, but often acted as a motive to undertake a more difficult problem.—*H. Beaumont* (Kentucky).

790. Sander, F. Zur neueren Gefühlslehre. (The newer theory of emotions.) *Ber. 15. Kongr. dtsh. Ges. Psychol., Jena*, 1936, 23-52.—A critical review and synthesis of the principal contributions made by German psychologists since Wundt to the study of feelings and emotions. The author includes 131 publications in this survey and points out that more recent investigators have discarded the simpler analysis of conscious contents, typical of the second half of the nineteenth century, for a more comprehensive view of mental life in all its complexity. More than anywhere else has the Gestalt concept demonstrated its usefulness in this field, and many older misconceptions caused by the analytical destruction of affective structural unities have been rectified.—*H. Beaumont* (Kentucky).

791. Sapirstein, M. R., Herman, R. C., & Wallace, G. B. A study of after-contraction. *Amer. J. Physiol.*, 1937, 119, 549-556.—A study was made of the involuntary repetition of a movement following a somewhat long continued voluntary muscular response. Human subjects stood on one leg and lifted the other alone or attached to a weight. The movement was recorded kymographically. Lifting continued for 1 to 25 seconds brought the after-reaction. A minimum of three short movements also produced it. The after-reaction was greater with a greater weight. Dorsiflexion of the foot or raising the ipsilateral arm tended to increase it and raising the contralateral arm to decrease it. Fatigue decreased or abolished the after-reaction, and it could be voluntarily inhibited. The phenomenon has the characteristics of a cortical after-discharge. Such after-discharge may play a part in rhythmic performances such as walking, and it may be a source of initial awkwardness in complex acts which

is later eliminated by practice.—T. W. Forbes (Harvard Bureau for Traffic Research).

792. Saul, L. J., & Alexander, F. The human spirogram. *Amer. J. Physiol.*, 1937, 119, 396-397.—"The main features of a person's spirogram are individual and characteristic, somewhat like his handwriting. They are relatively constant (and recognizable) despite variations in details. Of the Institute for Psychoanalysis series, 21% showed considerable variability but still retained a recognizable characteristic individuality. Experiment showed that imitation of another's spirogram is extremely difficult. Statistical studies have thus far failed to reveal any significant correlations between features of the spirograms and body build or chest shape. Relative to the averages of the entire group, fifteen asthmatics showed slightly higher respiratory levels, faster rates, more irregularity, and conspicuously less rounding, hooks and spikes. Spirograms of groups of men and women, normal, psychoneurotic, psychotic, asthmatic, and with gastric ulcer were compared and show certain characteristics."—T. W. Forbes (Harvard Bureau for Traffic Research).

793. Schiller, P. v. Der Witz und das Komische. (Wit and humor.) *Ber. 15. Kongr. dtsch. Ges. Psychol., Jena*, 1936, 89-92.—Humor involves the logical enjoyment of an involuntary change in the aspect of a labile conceptual structure, which becomes manifest in jokes, parodies, caricature, mischief, and other variations. A comical reaction can be obtained only when the subject is willing to submit to this change in aspect. In addition, a sort of affective lack of restraint is necessary to allow expression to the joy which follows the discovery of the new angle. This places repressed and timid persons in the same category with the unintelligent in respect to their inability to enjoy humor.—H. Beaumont (Kentucky).

794. Seyle, H. Further evidence in support of the alarm reaction theory of adrenal insufficiency. *Amer. J. Physiol.*, 1937, 119, 400-401.—"The great similarity between the symptoms of adrenal insufficiency and those produced by any stimulus which elicits the syndrome characteristic of acute generalized damage of the organism which was described under the name of the 'alarm reaction' and other experimental results reported in a previous communication lead us to assume that the liberation from the tissues of certain toxic metabolites with histamine-like pharmacological effects are the primary cause both of the alarm reaction and of adrenal insufficiency. The opinion has been expressed that these toxic metabolites cannot be detoxified in the absence of the adrenals. This would also explain why adrenalectomized animals have so little resistance against various damaging stimuli."—T. W. Forbes (Harvard Bureau for Traffic Research).

795. Steffensen, E. H., Brookhart, J., & Gesell, R. Proprioceptive respiratory reflexes of the vagus nerve. *Amer. J. Physiol.*, 1937, 119, 517-526.—

Previous studies by other authors suggest an acceleratory pulmonary reflex rather than the classical idea of rhythmic reflexes from volume changes in the lungs. A study of possible plurality of function of the vagus nerve was therefore undertaken by means of differential cold and pressure block. The number of respirations per minute gave an index of acceleration and deceleration. Graded sectioning of the nerve was used as a control. Interruption of vagal transmission by all methods reduced slowing from inflation and acceleration from deflation. After complete double vagotomy inflation of the lungs still accelerated the rate of breathing. These effects apparently arose from the carotid sinus, since they were eliminated by clamping the carotids. It is suggested that an accessory mechanism for acceleration of breathing by continuous stimulation of pulmonary proprioceptive fibers may not exist.—T. W. Forbes (Harvard Bureau for Traffic Research).

796. Taylor, J. H., Thompson, C. E., & Spassoff, D. The effect of conditions of work and various suggested attitudes on production and reported feelings of tiredness and boredom. *J. appl. Psychol.*, 1937, 21, 431-450.—In order to investigate certain problems of fatigue and boredom in a repetitive task, a simple apparatus involving the movement of disks through grooves by means of a stylus was constructed. All groups were given the same preliminary directions. Some of the subjects worked in groups, others individually. With a limited number of subjects (a total of 88) an analysis of work curves showed that under normal working conditions there was an inverse relationship between amount of work produced and reported feelings and observations of tiredness and boredom. Rewards facilitated production, but had little effect on reports of tiredness and boredom. Knowledge of a rest pause retards production immediately preceding the pause. Work in the somnambulistic trance (without suggestion) does not markedly affect production, but inhibits reports of tiredness and boredom. Talk and laughter tend to inhibit reports of tiredness and boredom. Subjects working alone produced more than those working in a group, but there was little difference between the two conditions in reports of tiredness and boredom. Positive motivation in the waking state facilitates production and inhibits feelings of tiredness and boredom. Negative motivation inhibits production, but has little effect on reports of tiredness and monotony. The trance condition causes the person to produce less than in the waking state, but to underestimate the time spent on the task.—A. B. Blankenship (Psychological Corporation).

797. Tuttle, W. W., & Van Dalen, D. The effect of tension on the latent time of the gastrocnemius muscle. *Arbeitsphysiologie*, 1936, 9, 345-350.—R. R. Willoughby (Brown).

798. Van Liere, E. J., Sleeth, C. K., & Northrup, D. The relation of the size of the meal to the emptying time of the human stomach. *Amer. J.*

Physiol., 1937, 119, 480-482.—The emptying time of the stomach was determined fluoroscopically on 6 male subjects. Doubling the size of the meal increased emptying time approximately 17%; tripling increased it approximately 38%. In one case there was no appreciable difference in emptying time, and it is suggested that here the increased distension of the stomach walls produced more effective contractions. The study yields scientific evidence for the popular experience that hunger recurs later after a large meal.—T. W. Forbes (Harvard Bureau for Traffic Research).

799. Wartegg, E. Gefühl und Phantasiebild. (Emotion and imagination.) *Ber. 15. Kongr. dtsh. Ges. Psychol., Jena*, 1936, 70-81.—Slips of paper on which one, two or three dots, lines or curves were printed were submitted to the subjects with instructions to complete the drawings. Character differences were evident in the following types of solutions: formal abstraction, concrete objectivity, emotional sincerity, irrational imagination. These differences in productive imagination are constant factors which determine to a large extent the individual's further development. They are especially marked in the intermediary stage which follows eidetic imagery and influences the mature person's values and ideals.—H. Beaumont (Kentucky).

800. Wellek, A. Gefühl und Kunst. (Emotion and art.) *Ber. 15. Kongr. dtsh. Ges. Psychol., Jena*, 1936, 82-88.—As far as their quality, intensity and vividness are concerned, esthetic emotions are not different from those involved in everyday situations, but they differ in their dynamic value as stimuli to activity and expression. The relation of the two types of emotions is the same as that between art and life itself. Esthetic emotions may become more pronounced because of our inability to give expression to them, which also accounts for the fact that such emotions tend to be less shallow and artificial than the others.—H. Beaumont (Kentucky).

801. Wilbur, D. L., McLean, A. K., & Allen, E. V. Clinical observations on the effect of benzedrine sulfate. *J. Amer. med. Ass.*, 1937, 109, 549-554.—The immediate effects of oral administration of benzedrine sulfate to a group of 100 patients in which diagnoses were made of chronic exhaustion, depression, and psychoneurosis, were favorable in approximately 80, 70, and 46% of the cases respectively. In some cases the results were spectacular. Continued administration of the drug brought less favorable results. Of the patients initially benefited, about 50% who were chronically exhausted and 25% who were depressed continued to receive benefit from one to eight months. Since benzedrine is a stimulant and therefore apparently does not fundamentally or permanently alter a psychotic disorder or a state of chronic exhaustion, the question is raised whether it is logical and safe continuously to stimulate individuals who present such disturbances.—W. J. Brogden (Johns Hopkins).

802. Wright, H. F. The influence of barriers upon strength of motivation. *Contr. psychol. Theor.*,

1937, 1, No. 3. Pp. 143.—The hypothesis upon which the work in this monograph is based is that a barrier affects strength of motivation in the sense that it increases the desirability of the goal object. Experimental situations were used in which desired objects were so placed that barriers must be removed or circumvented before the object could be attained. Both adults and children were used as subjects. It is concluded that there is no hypothesis to be advanced to account for the law that a barrier enhances a positive valence.—F. A. Mole, Jr. (Brown).

803. Wright, I. S., & Littauer, D. Lobeline sulfate: its pharmacology and use in the treatment of the tobacco-habit. *J. Amer. med. Ass.*, 1937, 109, 649-654.—Oral administration of lobeline sulfate in doses of 0.008 gm. inhibits the desire to smoke, but at the same time produces gastro-intestinal discomfort. Smaller doses of the drug may be useful as a cure of the tobacco-habit.—W. J. Brogden (Johns Hopkins).

804. Zeddies, A. Willensstärke und erfolgreiches Verhalten. (Will power and successful behavior.) *Ber. 15. Kongr. dtsh. Ges. Psychol., Jena*, 1936, 168-178.—Ego-consciousness is a typical characteristic of volition and hence of successful behavior. Confidence in one's ability shows itself in a positive attitude toward oneself and the task. Keeping the task constantly in mind is a condition of successful behavior, and the subject needs no self-prodding when the goal is desirable enough. This means that will power is not an essential prerequisite, but confident expectation is a most important factor. Willingness to undertake a task, unrelated to will power, may become a habit, and distinguishes the person who "gets things done" from others. Schizoid personalities have the advantage of easy concentration, tenacity in keeping their attention on the task, and the habit of carrying out their plans without regard to anything else. They are at a disadvantage in placing little value on actual results, in having a tendency to stick too closely to a predetermined plan, and in their lack of confidence in themselves. Cycloid personalities are willing to undertake a task and become enthusiastic, but are easily distracted. In this case, as in all others, the habit of self-discipline will make the exercise of will power superfluous.—H. Beaumont (Kentucky).

805. Zilian, E. Die Beziehungen zwischen Wille und Denkfunktion auf Grund charakterologischer Erfahrung und Erkenntnis. (The relations between volition and cognition on the basis of characterological experience and understanding.) *Ber. 15. Kongr. dtsh. Ges. Psychol., Jena*, 1936, 158-159.—Dynamic and static moments in volitional and cognitive processes show a marked relationship. A study of twins has demonstrated that the personality types characterized by different dynamic and static structures of willing and thinking are the result of hereditary influences. They are also related to

differences in bodily type and hence denote racial characteristics.—*H. Beaumont* (Kentucky).

[See also abstracts 625, 627, 629, 632, 639, 641, 642, 648, 649, 650, 652, 655, 656, 657, 662, 663, 664, 680, 700, 727, 733, 810, 836, 854, 858, 864, 876, 894, 903, 905, 923, 925, 928, 936, 941, 952, 990, 991, 996.]

PSYCHOANALYSIS, DREAMS, HYPNOSIS

806. Buttersack, F. *Seelenstrahlen und Resonanz*. (Mental radiations and resonance.) Leipzig: Engelmann, 1937. Pp. 115. RM. 2.80.—*R. R. Willoughby* (Brown).

807. Darlington, H. S. The primitive manufacture of clay pots; an exposition of the psychology of pot-making. *Psychoanal. Rev.*, 1937, 24, 392-402.—This is an analysis of the psychology of the manufacture of clay pots as found among several primitive groups: the Baganda of Africa, the Lhota Nagas of Assam, the Yuracares of the eastern foot of the Bolivian Andes, the Makusi in Guiana, the Lakshers of Assam, the natives of Mailu Island, the Zuñis of our own Pueblo region, and the Thonga of southern Africa. The symbolic relation of pot-making to human procreation is pointed out.—*L. S. Selling* (Recorder's Court, Detroit).

808. Kamm, B. A technical problem in the psychoanalysis of a schizoid character. *Bull. Menninger Clin.*, 1937, 1, 275-284.—This paper presents a brief case history of a schizoid character who utilized his nine years' knowledge of psychoanalysis (prior to treatment by the author) to avoid changing the practice of his life. This is an unusual form of resistance and constitutes a technical problem. The author gives the method by which he overcame this resistance.—*J. F. Brown* (Kansas).

809. Knight, R. P. Practical and theoretical considerations in the analysis of a minister. *Psychoanal. Rev.*, 1937, 24, 350-364.—The analysis of a minister is reported, confirming the idea that the individual religious belief of a person will take a form which is for him the best solution of his Oedipus conflict. It is concluded that at least in some cases the patient can be relieved, by analysis, of his disabling neurotic symptoms without dissipating a strong religious faith which also has evident neurotic origins.—*L. S. Selling* (Recorder's Court, Detroit).

810. Schmeing, K. Gefühl und Wille im eidetischen und "okkulten" Erleben. (Emotion and volition in eidetic and "occult" experiences.) *Ber. 15. Kongr. dtsch. Ges. Psychol.*, Jena, 1936, 196-200.—Experimental studies show that clairvoyance has an eidetic basis. The same is true of other types of visual extra-sensory perception. Similar experiences in the auditory field have an eidetic-hallucinatory basis. The belief in ghosts is probably caused by a combination of factors, including the ontogenetic-phylogenetic parallel between the civilized child and the primitive adult; the tendency to accept eidetic images as proof of the existence of ghosts; the part which eidetic experiences have played in the early

development of most religions. Occult societies, Yogi practices, and others use eidetic training as part of their preparation for novices. Emotions play an essential part in these experiences. The trance is an extreme phase of the eidetic condition, in which the environment is ignored to the extent of permitting a tetanoid rigidity to occur. In most cases volition is absent, but the subject may attempt to overcome his eidetic experiences or use volition to create them.—*H. Beaumont* (Kentucky).

811. Schriever, W. Einige Traumbeobachtungen. (Some observations on dreams.) *Z. Psychol.*, 1935, 134, 349-371.—The author presents a protocol of his dreams, the analysis of which shows, for example, that (1) visual perceptions predominate, (2) auditory phenomena occur frequently, but less so than visual; other phenomena noted were: (3) proprioceptive, (4) olfactory, (5) organic, e.g. hunger and thirst, (6) sex dreams (never complete), (7) perceptions of movement, space and time. The observations presented are related by the author to some work published by I. Frank.—*G. F. J. Lehner* (Brown).

[See also abstracts 611, 614, 839, 910.]

FUNCTIONAL DISORDERS

812. Adler, A., & Crookshank, F. G. Individual psychology and sexual difficulties. *Med. Pamph. indiv. Psychol.*, 1936, No. 13.—*R. R. Willoughby* (Brown).

813. [Anon.] The chances of becoming mentally ill. *Statist. Bull. Metrop. Life Ins. Co.*, 1937, 18, 5-8.—*R. R. Willoughby* (Brown).

814. Balvet, P. De l'importance du sentiment de dépersonnalisation dans la pathogénie des délires. (On the importance of the feeling of depersonalization in the pathogenesis of delusions.) *Evolut. psychiat.*, 1936, 4, 3-26.—A description of the four modalities of the Krishaber phenomenon is followed by an analysis of the delusional ideas at the basis of the feeling of depersonalization. Since such a great number of delusion cases have this feeling as a basis, the author believes that the feeling of depersonalization ought to occupy a central place in hospital psychiatry.—*G. Goldman* (Sorbonne).

815. Baruk, H., & Gavaudan, Mlle. Hystérie et psychose périodique. (Hysteria and the periodic psychosis.) *Rev. méd. franç.*, 1937, 18, 199-211.—It is generally believed that there exists a special mental state in hysteria. These patients manifest a kind of perverted or mythomantic psychology in that from time to time they make objective use of various motor or sensory accidents. Cases are cited where clear-cut hysterical incidents appear during the course of manifest periodic psychoses. Five cases were studied where the periodic psychosis was associated respectively with a case of Pott's hysterical pseudo-mal, nervous crises, mutism, rhythmic contractions, and hemiplegia. In all these cases the psychological disturbances, in so far as they affected imaginary phenomena and mythomania, were transitory.

They coincided exactly with the depressive or manic periods, and were not the cause but the consequence of the same disequilibrium of the nervous system present in the periodic psychosis. These incidents seemed to appear during the course of light attacks, but when profound melancholy occurred this stage of hysteria was no longer present.—*M. H. Piéron* (Sorbonne).

816. Bersot, H. *Die Fürsorge für die Gemüts- und Geisteskranken in der Schweiz.* (The care of the emotionally and mentally ill in Switzerland.) Bern: Huber, 1936. Pp. 175. Schweiz. fr. 4.50.—*R. R. Willoughby* (Brown).

817. Beyerholm, O. *Psykiatriens historie.* (The history of psychiatry.) Copenhagen: Levin & Munksgaard, 1937. Pp. 326.—In this book, the main emphasis has been put on the scientific psychiatric literature of all times. For the ancient part of the medical history the works of the Greeks, Romans, and Arabs are treated, mainly chronologically. A special chapter treats medieval psychiatry; then follow chapters on each century up to the twentieth. For the twentieth century there is only a brief review of present problems. The plan laid down by the author constantly takes into consideration philosophy, psychology, religion, and other cultural problems. The treatment is purely objective. The author hopes that his work will serve as a source book for further historical studies and as a handbook for students of psychiatry.—*M. L. Reymert* (Mooseheart Laboratory for Child Research).

818. Björnberg, J. *Till frågan om psychopat-vårdens ordnande.* (Concerning the problem of arrangement of psychopathic wards.) *Svenska Läkartidn.*, 1937, 34, 1413-1420.—This is a criticism of the proposals set forth by Kinberg in his article, "Kriminalpolitikens centrala organisation," *Svensk Juristtidn.*, 1937, No. 5, for the practical care of the criminal psychopath.—*M. L. Reymert* (Mooseheart Laboratory for Child Research).

819. Bleyer, A. *Theoretical and clinical aspects of mongolism.* *J. Mo. med. Ass.*, 1937, 34, 222-227.—*R. R. Willoughby* (Brown).

820. Booth, E. *Maladjustment and the mental case; a lesson for vocational advisors.* *Trained Nurse*, 1937, 98, 627-630.—*R. R. Willoughby* (Brown).

821. Braatøy, T. *Is it probable that the sociological situation is a factor in schizophrenia?* *Acta psychiat.*, Kbh., 1937, 12, 109-138.—This is a general critical treatise on the subject, with statistical and other materials drawn from various countries and the literature to date. One main conclusion seems to be that the direct correlation between the frequency of schizophrenia and the economic fluctuations represents only one, perhaps a subordinate, side of the problem. It is more important to take a far-sighted viewpoint in regard to the underlying sociological processes. This is not usually done in present-day psychiatry. The futility, as regards

mental hygiene, of a research isolated from the sociological situation and dealing with schizophrenia as such, may be illustrated by proposals to eradicate schizophrenia by sterilization. Such proposals cannot, on the evidence available today, be put into practice until long after the population which it is proposed to purge of the disease has died out. Bibliography.—*M. L. Reymert* (Mooseheart Laboratory for Child Research).

822. Cameron, D. E., & Hoskins, R. G. *Experiences in the insulin-hypoglycemic treatment of schizophrenia.* *J. Amer. med. Ass.*, 1937, 109, 1246-1249.—Out of 17 cases, 2 were completely cured and 5 partially cured by insulin treatment.—*W. J. Brogden* (Johns Hopkins).

823. Chiavacci, L. *Die Störungen der Sexualfunktion bei Mann und Weib.* (Disturbances of the sex function in male and female.) Leipzig, Wien: Deuticke, 1937. Pp. 145. RM. 4.60; 5.40.—*R. R. Willoughby* (Brown).

824. Codet, O. *Enurésie, symptôme psychogène.* (Enuresis, a psychogenic symptom.) *Evolut. psychiat.*, 1936, No. 3, 27-42.—Enuresis, incontinence of urine without discoverable lesion, is a matter of psychopathology. The author gives an etiological classification under two headings: the first type, which presents symptoms of affective arrest, includes children from 8 to 9 years of age who have never been trained because their mothers were desirous to retain complete intimacy with them or who, as is more often the case, have become enuretic as a result of a psychological trauma, as, for example, at the birth of a younger child; and the second type, which covers children of 10, 13, and 16 years of age, in whom urethral hedonism has become associated with affective regression. For treatment the author recommends psychotherapy (pedopsychanalysis) and, secondarily, opotherapy.—*G. Goldman* (Sorbonne).

825. Dearborn, G. V. N. *The concept of psychogenesis.* *J. abnorm. soc. Psychol.*, 1937, 32, 207-215.—The word *psychogenic* is misleading and inexpedient when used in any meaning other than that of "occasioned by way of the mind." Furthermore, it is an unwarranted assumption to imply that certain mental conditions have no organismal concomitants, since the only valid presumption is that there always is a bodily process of some sort.—*C. H. Johnson* (Boston Psychopathic Hospital).

826. Dent, J. Y. *The environmental factors in the causation and prevention of alcoholism.* *Brit. J. Inebri.*, 1937, 35, 1-9.—*R. R. Willoughby* (Brown).

827. Flechtner, G. *Über die Bedeutung der willentlichen Veranlagung Hirnverletzter.* (Concerning the nature of the act of will in cases of brain lesion.) *Arch. ges. Psychol.*, 1937, 98, 326-330.—Findings of Poppelreuter are cited which project the question whether the lack of will-power apparent in brain injuries may be due to disturbance of the mechanism or to a subjective inferiority feeling. The author uses the material used by Poppelreuter, namely dynamometer, dynamometer shears and simulation dynamometer, combining his methods

with those of Ach for the study of will-power. 9 characteristic cases studied are described at length, and differences noted between introvert and extravert types of personality.—*A. B. Herrig* (Michigan Central State Teachers College).

828. Gordon, R. G. The neuropsychological basis of conduct disorder. *Brit. med. J.*, 1937, June 26, 1325-1328.—*R. R. Willoughby* (Brown).

829. Gosney, E. S. Twenty-eight years of eugenic sterilization in California. *Eug. News*, 1937, 22, 86-87.—The Human Betterment Foundation's second complete survey of eugenic sterilization in California began in 1932, when the number of cases had risen to 10,000. A few of the findings follow: (1) Two-thirds of California sterilizations are insane, averaging 30 years of age and about as frequently male as female. (2) The largest group of sterilized insane come from the ranks of unskilled labor, vagrants, dependents and unemployables. (3) The more promising delinquent morons are sterilized, trained and paroled. (4) Of the latter group 90% of the boys gave satisfaction on the job; 78% of the girls were rated by their employers as fair if not entirely satisfactory. (5) Of the feeble-minded females, 44% are or have been married. (6) Of these marriages of the sterilized feeble-minded, 59% were rated happy, 31% unhappy and 10% doubtful. (7) The survey corroborated the earlier findings that "nine out of every twelve of the sterilized feeble-minded girls had been sex offenders before commitment, but after sterilization and parole only one in every twelve was a sex offender."—*M. V. Loudon* (Pittsburgh).

830. Hymanson, A. Functional nervous diseases in children. *Arch. Pediat.*, 1937, 54, 317-322.—*R. R. Willoughby* (Brown).

831. Jaensch, E. R. Auseinandersetzungen in Sachen der Eidetik und Typenlehre. XIV. Tuberkulose und Seelenleben, mit einem Beitrag zur Schizophreniefrage. (Explanations concerning the eidetic and the type doctrine. XIV. Tuberculosis and mental life, with a contribution on the schizophrenia problem.) *Z. Psychol.*, 1935, 135, 1-19.—This commemorative article for the 70th birthday of W. Pöndorf, well-known lung specialist, concerns itself with the influences upon the intellectual outlook of Germans undergoing treatment for tuberculosis, with some reference to types.—*G. F. J. Lehner* (Brown).

832. Knöös, H. The mirror sign. A rather neglected symptom in certain mental diseases. *Acta psychiat. Kbh.*, 1937, 12, 155-171.—The writer reviews the literature on the mirror sign, that is, the apparent necessity of certain patients to look frequently and long at themselves in a reflecting surface (windows, mirrors, etc.), from the time when Abély first described it in 1927 to date. He discusses several cases from his own hospital in Gothenburg, takes issue with Abély's theory, and explains the mirror sign, at least in certain cases of psychasthenia, as a compulsive act, comparable with, e.g., the psychasthenic need of

constantly washing the hands.—*M. L. Reymert* (Mooseheart Laboratory for Child Research).

833. Koster, S. [Frequency, causes and treatment of enuresis in adults and in children.] *Ned. Tijdschr. Geneesk.*, 1936, 80, 1723 ff.—The estimates of various authors as to the frequency of enuresis in children vary from 1 to 10%. An investigation was made by the author concerning the occurrence of enuresis in soldiers and in those reporting for medical examination for military service. He deduces from this inquiry that in the Netherlands about 3000 men and over 1500 women suffer from enuresis. The various causes quoted by other investigators for this disorder are mentioned, but of these only too great depth of sleep is acknowledged by the author as an important factor. As to treatment, it is pointed out that this should be exclusively psychic, for with this the best results are obtainable. The author reports 98% of recoveries with hypnosis. An abbreviated record is given of three typical cases.—(Courtesy *Child Developm. Abstr.*)

834. Kretschmer, E. Heredity and constitution in aetiology of psychic disorders. *Brit. med. J.*, 1937, Part 2, 403-406.—*W. J. Brogden* (Johns Hopkins).

835. Kretschmer, E. Structure of the personality in psychotherapy. *Brit. med. J.*, 1937, Part 2, 518-522.—*W. J. Brogden* (Johns Hopkins).

836. Kretschmer, E. Instinct and hysteria. *Brit. med. J.*, 1937, Part 2, 574-578.—*W. J. Brogden* (Johns Hopkins).

837. Lewis, A., Samuel, N., & Galloway, J. A study of cretinism in London. *Lancet*, 1937, 232, 1505-1509; 233, 5-9.—Of 89 cases of cretinism, 20% had I.Q.'s above 80. Those who had better than average intelligence were so slow in performance that they did very poorly upon various psychological tests scored on a time basis. On vocabulary tests they did somewhat better than normals. The intellectual level of cretins is discussed in relation to family history, physical characteristics, and therapy. There was a rough correlation between adequacy of treatment and intellectual level attained. Psychological attainment of cretins is also influenced by the stage of development at which thyroid deficiency occurs, the degree of thyroid deficiency, the hereditary endowment of the child, and environmental influences.—*W. J. Brogden* (Johns Hopkins).

838. Liddell, H. S., Sutherland, G. F., Parmenter, R., Curtis, Q. F., & Anderson, O. D. Further analysis of the conditioned reflex method in relation to the experimental neurosis. *Amer. J. Physiol.*, 1937, 119, 361.—"Our experiments have proceeded upon the hypothesis that the experimental neurosis so frequently develops in the course of conditioned reflex experiments because the conditioned animal cannot, through procrastination or evasion, avoid making difficult decisions. Systematic variations in the amount of neuromuscular freedom permitted the sheep and pig during conditioning to food and shock have been related to the nature and pre-

dictability of the animal's conditioned responses as well as to features of behavior indicative of 'tension states' before the onset of the experimental neuroses. As motor outlets (such as are employed in locomotion, opening of the food box, etc.) are blocked signs of nervous tension appear while the conditioned responses become stereotyped and predictable."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

839. **Lorand, S.** Dynamics and therapy of depressive states. *Psychoanal. Rev.*, 1937, 24, 337-349.—Freud's description of the psychogenesis of depressive states has been elaborated by Abraham, who points out that both oral and anal points of fixation are prominent and of the greatest importance in such cases. Protracted analysis of five depressive cases provides additional evidence that the adult situation which precipitates a depression is emotionally identical with a painful and severe experience in early childhood. All of these cases showed tremendous sadism, distrust of the world, constant complaints of mental insufficiency, retardation in social functions, hypochondriacal body complaints, panicky situations and reactions, mild delusions of persecution, and suicidal tendencies. Evidence is given that the usual rules of analysis do not suffice in depressions, and suggestions are made for the analysis of such cases.—*L. S. Selling* (Recorder's Court, Detroit).

840. **Löwy, I.** "Und was haben Sie dazu getan, damit es besser wird?" ("And what did you do about it to make it better?") *Int. Z. indiv. Psychol.*, 1937, 15, 167-168.—By three examples the author shows how Adler brought people to take an active attitude toward this question.—*M. F. Martin* (W. Springfield, Mass.).

841. **Mayer, M. D.** The status of psychotherapy in gynecologic practice. *Amer. J. Obstet. Gynaec.*, 1937, 34, 47-57.—*R. R. Willoughby* (Brown).

842. **McInnes, R. G.** Observations on heredity in neurosis. *Proc. R. Soc. Med.*, 1937, 30, 895-904.—Of 50 cases of anxiety neurosis, the incidence of psychosis in parentage did not differ from that of the control group of 75 normals; incidence of neurosis in parentage was over twice that of the controls; and incidence of neurosis or psychosis of similar type in parentage was over three times that of the control group. In 30 cases of hysteria, the incidence of psychosis in parentage was twice that of the control group; incidence of neurosis in parentage was slightly less than twice that of the controls; and incidence of neurosis or psychosis of similar type in parentage was somewhat less than that of the control group. The two experimental groups are compared with the control group in the effect of parental abnormality, neurosis in childhood, and apparent cause upon the disorder.—*W. J. Brogden* (Johns Hopkins).

843. **Menninger, W. C.** Bibliotherapy. *Bull. Menninger Clin.*, 1937, 1, 263-274.—This paper presents an analysis of readers' responses to popular presentations of psychiatry and the effects of reading as a therapeutic measure in psychiatric practice.

Indications and contra-indications for bibliotherapy in the various psychiatric categories are given provisionally.—*J. F. Brown* (Kansas).

844. **Ostenfeld, I.** De saakaldte hysteriske reaktioners forhold til konstitutionstypen. (The relation of the so-called hysterical reactions to constitutional type.) *Hospitalstidende*, 1937, 80, 1130-1140.—The material for this investigation consisted of patients in the State Hospital in Copenhagen, 65 cases in all, whose constitutional types were judged by several clinicians. Anthropometric measurements were not employed. 7 brief case histories are included in the report. Among the conclusions are: (1) The hysterical reactions under investigation show a strong dependency on the constitutional type, since the pyknic and the asthenic show affinity each to its specific reaction type. (2) In regard to the pyknic, cortical processes seem to play a certain role in the development of the hysterical reactions. (3) No correlation was found between lighter cases of hysteria and intelligence level. (4) Hysteria should be looked upon as a reaction form which follows certain biological laws and necessarily has no psychopathic constitution back of it. Bibliography.—*M. L. Reymert* (Mooseheart Laboratory for Child Research).

845. **Quercy, P.** Les hallucinations. (Hallucinations.) Paris: Alcan, 1937. Pp. 180. Fr. 10.—The author describes the hallucinatory elements which are present in actual perception, i.e., the hallucinations which accompany the perception of existing objects. Three types of hallucinations are connected with actually present objects: ordinary illusions, opsiphonias, and the illusions of those individuals having amputated limbs. Second, we have three types of hallucinations which occur following the perception of the object, not connected in time with the object: metesthesia, eidetic images, and voluntary hallucinations. Third the author considers the dream, and fourth, the hallucinations of mystics.—*M. H. Piéron* (Sorbonne).

846. **Russell, L. W.** Hypoglycaemic shock in the treatment of schizophrenia. *Lancet*, 1937, 232, 747-749.—Of 8 schizophrenics (5 having a longer psychosis than 1½ years) treated by hypoglycaemic shock, 2 were completely cured, 3 were improved, and 3 slightly improved.—*W. J. Brogden* (Johns Hopkins).

847. **Rymer, C. A., Benjamin, J. D., & Ebaugh, F. G.** The hypoglycemic treatment of schizophrenia. *J. Amer. med. Ass.*, 1937, 109, 1249-1251.—3 out of 7 cases of schizophrenia showed complete recovery following insulin treatment.—*W. J. Brogden* (Johns Hopkins).

848. **Springer, D. G.** Neurasthenia. *Soc. Work Technique*, 1937, 2, 253-260.—This article contains a brief review of neurasthenia with respect to its symptoms, causes, extent, prevention, treatment, and social pathology.—*M. Keller* (Brown).

849. **Squires, P. C.** Fyodor Dostoevsky; a psychopathographical sketch. *Psychoanal. Rev.*, 1937, 24, 365-385.—Dostoevsky is presented as one

of the most severely pathological of all men of genius. His case has been studied by Freud and by many other analysts. The present study considers his letters, his wife's diary and reminiscences, and his daughter's biography, as well as his novels, and diagnoses his case as that of "an epileptic schizophrenic, paranoid type, complicated by hysterical overlay, the epilepsy being foundational; all the available data, including pictures of the man, point to an endocrine abnormality of which the chief components are hyperthyroid, hyperpostpituitary, and hypoparathyroid. *Dostoevsky was essentially a pituitary-centered individual.*"—L. S. Selling (Recorder's Court, Detroit).

850. Stone, S. *Psychiatry through the ages. J. abnorm. soc. Psychol.*, 1937, 32, 131-160.—Various Egyptian papyri, unearthed in many places, give occasional mention of details in regard to mental diseases. The writings of the Greek poets and dramatists contain many allusions to insanity, but Greek physicians referred to it very little. Aretaeus of Cappadocia (about 200 A.D.) was the first to describe the manic-depressive psychosis in its various phases. The ideas of Galen in regard to insanity formed the basis for all the psychiatry of the Middle Ages, but are sadly disappointing when viewed in modern light. The monks were the only medical practitioners. In the explanation of the causes of insanity, beliefs in devil possessions, superstitions, church theology and the humoral theories of the ancient physicians were mingled together. The 16th century marked the beginning of a new era in medicine. In psychiatry there was an increased recording of cases and attempts at classification. For treatment, blood letting for mania continued to be the favorite method till nearly the middle of the 19th century. The last 35 years have changed the entire aspect of the problem of mental disease. Sufficient scientific data of great importance have been accumulated to remove the shroud that has surrounded it in the past. The purely organic disorders are understood better, but dementia praecox and the neuroses still represent intriguing problems.—C. H. Johnson (Boston Psychopathic Hospital).

851. Störing, G. E. *Gedächtnisverlust durch Gasvergiftung.* (Loss of memory due to gas poisoning.) *Ber. 15. Kongr. dtsch. Ges. Psychol.*, Jena, 1936, 208-211.—A patient has lost all sense of time since he was overcome by gas fumes on May 31, 1926. His memory and consciousness of time do not extend further than this date; he still thinks that it is May 31, 1926 and that he is 24 years old. Though he perceives accurately, he forgets immediately. Otherwise his mental experiences and reactions appear to be unaffected. The patient affords a valuable insight into normal mentality, because one isolated function has been rendered inoperative, which constitutes a unique case.—H. Beaumont (Kentucky).

852. Symonds, C. P. *Mental disorder following head injury. Proc. R. Soc. Med.*, 1937, 30, 1081-

1094.—In 16 cases of concussion, all of the closed lesion type uncomplicated by visible laceration of the cortex or by infection, there were acute symptoms of traumatic psychosis from 3 weeks to 14 months. In the early stages of the psychosis stupor is the dominant feature; later, confusion; and after confusion has faded into the background, defective memory for recent events with a tendency to confabulation. The tendency in all cases of post-traumatic dementia is toward recovery. Head injuries frequently play a role in precipitating schizophrenia, paranoia, or manic-depressive psychosis. Constitution is an important factor in mental disorder following head injury.—W. J. Brogden (Johns Hopkins).

853. Turlington, L. F. *The responsibility of the gynecologist to the so-called neurotic. Sth. med. J.*, 1937, 30, 723-726.—R. R. Willoughby (Brown).

854. [Various.] *Influence of emotions on bodily functions. Brit. med. J.*, 1937, July 10, 82-84.—Paper and discussion at a meeting of the section of psychiatry of the Royal Society of Medicine on June 29th.—R. R. Willoughby (Brown).

[See also abstracts 593, 601, 611, 617, 759, 775, 782, 783, 786, 801, 859, 865, 867, 869, 895, 935, 994.]

PERSONALITY AND CHARACTER

855. Baumgarten, F. *O karakterze i jego kształceniu.* (Concerning character and its formation.) *Kwart. psychol.*, 1937, 9, 169-202.—The author discusses the meaning of the concept *character*, the role it plays in social relationships and the possibilities of its modification.—T. M. Abel (Trade Extension Classes, New York City).

856. Brown, Fred. *Neuroticism of institution versus non-institution children. J. appl. Psychol.*, 1937, 21, 379-383.—The Brown personality inventory was given to groups of institutionalized children (200 orphans), to groups of several hundred children living with their parents in the general population, and to a group of children in the general population whose parents were of low socio-economic status (100 boys). It was found that the neuroticism of institution children (mean score, boys = 23.93; girls = 29.07) was greater than that of children who lived with their parents in the general population (mean score, boys = 17.34; girls = 18.36) while there was a similarity between them and the other group of low socio-economic status (mean score = 22.75).—A. B. Blankenship (Psychological Corporation).

857. Firgau, H. J. *Persönlichkeitsveranlagung und Wahrnehmung in ihrer untersuchungspsychologischen Bedeutung.* (The significance of personality structure and perception for psychological diagnosis.) *Ber. 15. Kongr. dtsch. Ges. Psychol.*, Jena, 1936, 223-227.—The relation between personality structure and perception is important as a measure of biotypological personality differences. This relation may be determined by means of tests of depth

perception, stroboscopic tests, and flicker tests. The author has constructed a simple apparatus, consisting of an aluminum drum containing two rows of holes, which illuminates the screen intermittently in rhythmic or arrhythmic fashion.—*H. Beaumont* (Kentucky).

858. Fischer, G. H. *Über den Einfluss körperlicher Veranlagung auf das Persönlichkeitsbild (mit besonderer Berücksichtigung der sog. vasomotorischen Überregbarkeit)*. (The influence of physical type on the structure of personality, with special consideration of so-called vasomotor hyperexcitability.) *Ber. 15. Kongr. dtsh. Ges. Psychol., Jena, 1936*, 93-98.—The author examined 77 persons with pronounced vasomotor excitability and found that the intensity of their physical reactions did not correspond to the intensity and type of their mental symptoms. The personality type of the individual determined the relation between these two disturbances. Physical balance was maintained by robust constitution and active vitality, mental balance by intellectual power and structural stability (Jaensch), balance of character often by a pronounced ego-consciousness. The interrelation of these three factors determined the individual's personality.—*H. Beaumont* (Kentucky).

859. Goldstein, K. *Personality studies of cases with lesions of the frontal lobes: I. The psychopathology of Pick's disease. Rorschach Res. Exch., 1936-37*, 1, 57-65.—The author distinguishes two types of human attitude toward the world: "First, a concrete attitude in which we are directed toward the given objects and, as well, are directed in our thinking and acting by them. Our activity is determined directly by the claims these objects of the world have upon us. Second, a more abstract attitude, in which we are moved at first to think about the objects and give an account of them to ourselves. Our actions then are governed not so much by the objects before us but by what we are able to think about them." In his discussion of the psychopathology of a case of Pick's disease, the author points out that this active, abstract attitude in behavior is lacking, whereas the concrete type of behavior is relatively well preserved. It is assumed that the alterations in behavior are caused by a frontal lobe lesion.—*M. Keller* (Brown).

860. Heiss, R. *Die Lehre vom Charakter*. (The doctrine of character.) Berlin: Gruyter, 1936. Pp. vi + 273.—*R. R. Willoughby* (Brown).

861. Lasswell, H. D. *The method of interlapping observation in the study of personality in culture. J. abnorm. soc. Psychol., 1937*, 32, 240-243.—Interlapping observation may be illustrated by the following: one group of subjects would be studied during their first and second years, another group studied during their second and third years, etc., until the entire career line from birth to old age would be observed in a succession of two-year periods. The method keeps cultural contexts at the center of interest; the time interval is long enough to enable intensive methods to be used, and

short enough to intensify the reconsideration of hypotheses, measures, and findings. Sometimes the pattern of cultural development and hence of personality development shifts quite rapidly. The patterns of 5-year-olds of 1929 are in many respects unrepresentative of the patterns of 5-year-olds of 1936. Any succession of events which can be treated as proceeding parallel to similar successions of events can be studied by the method of interlapping observation.—*C. H. Johnson* (Boston Psychopathic Hospital).

862. McClelland, E. S. *Minor plastic surgery and its relation to the inferiority complex. Med. Rec., N. Y., 1937*, 10, 419-424.—Discussion is given of the problems of plastic surgery and case histories are cited to show the development of personality maladjustments from facial disfigurements and their correction or alleviation by appropriate surgery.—*M. H. Erickson* (Eloise Hospital).

863. Morgault, M. *La ténacité chez l'adolescent*. (Tenacity in the adolescent.) Paris: Editions C.O.P., 1937. Pp. 110.—The author believes that the study of character, for the purpose of orientation, should consist chiefly in personal observation of a definite act which should be the same for all subjects. He emphasizes tenacity, not because it is the most important trait for any occupation, but because, due to its accompanying qualities, it is connected with many interesting characteristics. He discusses records obtained by the Henry dynamograph, the data of which show that the static psychometric volitional acts are dependent upon intelligence with respect to the quality of their effect, though this does not seem to be the same for psychoreceptor volition. In dealing with the measurement of tenacity, he takes up the optimal usefulness of the dynamograph, the significance of dynamograms, and the analysis of tenacity. He also discusses tenacity in relation to functional syntheses: intelligence and tenacity, psychological fatigability and tenacity, character and tenacity, etc. Besides a short bibliography, the book contains dynamographic curves, intelligence profiles, and tenacity profiles.—*M. H. Piéron* (Sorbonne).

864. Murray, H. A. *Visceral manifestations of personality. J. abnorm. soc. Psychol., 1937*, 32, 161-184.—Evidence favors the supposition that the unconscious image of a visceral condition, and the will to produce that condition, may occasionally be successful. This is substantiated by: the testimony of some patients with mild symptoms that they seemed to occur as "an answer to a wish"; the fact that if anyone who feels an internal sensation, for example who feels a bit faint, says to himself, "I am fainting, I want to faint," this occurrence is likely to be precipitated; the results of hypnotic experiments which have shown that in a few subjects almost any physiological condition may be produced; the experiments of Hudgins which showed that by repeated exercises of conditioning the pupil could be made to contract when the subject repeated under his breath the word "contract"; and the reports of

the control that Indian Yogins are able to exert over their physiological processes. The physician must learn to read in the mechanics and chemistry of the body the subterranean permutations of the mind, and by appropriate methods bring them to light and so dispel them.—*C. H. Johnson* (Boston Psychopathic Hospital).

865. Piotrowski, Z. **Personality studies of cases with lesions of the frontal lobes: II. Rorschach study of a Pick's disease case.** *Rorschach Res. Exch.*, 1936-37, 1, 65-77.—This article illustrates the application of the Rorschach method in personality studies of individual cases with lesions of the frontal lobes. The results are compared with the conclusions of neuropsychiatric examinations and of psychological tests.—*M. Keller* (Brown).

866. Reaser, E. F. **The personality panel in history.** *W. Va. med. J.*, 1937, 33, 310-319.—*R. R. Willoughby* (Brown).

867. Schott, E. L. **Personality tests in clinical practice.** *J. abnorm. soc. Psychol.*, 1937, 32, 236-239.—The Thurstone personality schedule applied to 200 normal subjects elicited scores comparable to the norms established on college freshmen. Applied to 130 applicants for professional positions, the alleged weaknesses of the self-rating scale were apparent and the scores proved unreliable as an index to the degree of emotional adjustment, because the subjects obviously were concerned only with making a good impression. Applied to 300 neuropsychiatric patients, of whom 25 were psychotic, the test failed to indicate the degree of maladjustment in individual cases, but proved to be a valuable short-cut in approaching individual problems through the patient's responses to specific items on the test. In distribution, range of scores, and measures of central tendency the test showed marked differences among the three groups compared, the applicants rating much better than average and the patients conclusively more maladjusted than average.—*C. H. Johnson* (Boston Psychopathic Hospital).

868. Stonequist, E. V. **The marginal man: a study in personality and culture conflict.** New York: Scribner, 1937. Pp. xviii + 228. \$1.60.—The book is a descriptive study of the effects of conflict of two cultures on the personality of individuals actively partaking of both; life-history documents, published and unpublished, are the principal source of data. Among the racial hybrid groups considered are the Eurasians of India, the Cape colored of South Africa, the mulattoes of the United States, the colored people of Jamaica, the Indo-Europeans of Java, the part-Hawaiians, and the mixed populations of Brazil. Among the cultural hybrids are the educated natives of imperial dominions, Jews, and immigrants. There are chapters on personality traits, adjustment to the hybrid situation, the sociological significance of marginal persons, and the principal types of adjustment—nationalism, the taking of an intermediary role, and assimilation or

"passing." Robert E. Park writes an introduction.—*R. R. Willoughby* (Brown).

869. Tallman, G., & Klopfer, B. **Personality studies of cases with lesions of the frontal lobes: III. Rorschach study of bilateral lobectomy case.** *Rorschach Res. Exch.*, 1936-37, 1, 77-89.—This article gives a summary of the case history of an individual after partial bilateral lobectomy, together with two Rorschach records and their interpretation. The results are compared with those obtained from a case of Pick's disease.—*M. Keller* (Brown).

870. Wright, H. W. **Facing reality.** *J. abnorm. soc. Psychol.*, 1937, 32, 223-235.—The first requirement for personal development along normal lines is the projection in imagination of goals or aims which promise fulfilment of desire, and are not impossible of attainment in view of the facts of human life and the real world. The second activity requisite to the integration and fulfilment of human personality is the selection and appropriation of those objects and events from the external environment which promise to lead to the attainment of self-conceived and self-adopted goals. The third activity consists in the effective employment of the materials and agencies provided by the actual world for use in the practical pursuit and attainment of personal goals. Reality first presents itself as the system of known facts verbally symbolized. In its second guise, reality presents itself in the form of sensory patterns which signify practicable courses of behavior. In the third place, reality takes the form of sequences of physical events and psychophysical reactions uniform enough to make possible the reliable prediction of later events whenever their antecedent conditions are observed or known to occur.—*C. H. Johnson* (Boston Psychopathic Hospital).

871. Xirau, J. **L'amor i la percepció dels valors.** (Love and the consciousness of values.) *Rev. Psicol. Pedag.*, 1936, 6, 269-341.—A philosophical discussion of love from the idealistic, religious, and dialectic standpoints, with applications to sexual ethics and education. Love is an integrating attitude toward the environment, arising from an abundant interior life, and comprising physical and psychophysiological factors, with moments of illumination. Its function is to bring out the greatest number of values and to subordinate the lower to the higher. It is the source of all values, and evil is simply absence of love. The presence or absence of love makes sexual conduct ethically good or bad. Educational dialectic is a dialectic of love. (English résumé.)—*M. E. Morse* (Baltimore).

[See also abstracts 793, 799, 805, 831, 835, 877, 886, 967, 997.]

GENERAL SOCIAL PROCESSES

(incl. Esthetics)

872. [Anon.] **Higher degrees in sociology conferred in 1936.** *Amer. J. Sociol.*, 1937, 43, 105-121.—A list is given of doctoral dissertations and masters'

theses in preparation in universities in the United States and Canada, as compiled from reports to the *Journal*. The following topics are of particular interest to psychologists: (1) Doctoral dissertations: (Columbia) Techniques of appeal and of social control; (Iowa) A statistical study of juvenile delinquency in Iowa; (New York University) Significant characteristics of the homosexual personality; Leisure-time interests and activities of the school children of Milburn Township, New Jersey; (Pennsylvania) Theories of crime causation; (Cornell) A statistical analysis of family relations based on student autobiographies; and (2) masters' theses: (Southern California) The social attitudes associated with relief in kind; A study of social distance between Mexican parents and American teachers in San Bernardino, California; Broken homes as a factor in the maladjustment of delinquent negro boys in Los Angeles, California; (Catholic University) The effect of mastoidectomy in early life on subsequent mental and social development; Friendship among preschool children; An experimental investigation of the short sample technique for measuring social reactions in preschool children; Sibling relations and juvenile delinquency in Washington, D. C.; A study of runaway recidivism among white girls; A study of the homes and family backgrounds of an unselected group of white behavior-problem boys discharged from the industrial home school of the District of Columbia; A study of twenty recidivist runaway white boys; Behavior problems of children from high and low socio-economic groups; Study of delinquency records of individuals committed to the National Training School for Boys by the Juvenile Court of the District of Columbia in 1934; The effect of a mastoidectomy in early childhood on subsequent mental and social development; (Simmons) The role of social treatment in a study of fifty children accepted by the Psychiatric Clinic of the Massachusetts General Hospital; The treatment of preventive cases in a child guidance clinic; Factors related to changes in intelligence levels of children at the Providence Guidance Clinic; A study of the social adjustment of fifty patients treated by social service; Obstacles and incentives to the treatment at the Child Guidance Clinic of the Massachusetts General Hospital; (Loyola) The development of delinquent patterns in a local area characterized by a high rate of delinquency; Comparative study of the superior only child and the superior child with siblings; (Yale) Race consciousness among American negroes; (Tennessee) Social therapy in individual adjustment: the welfare family; (Ohio State) The leisure-time activities of 100 relief and 100 non-relief children in Columbus, Ohio, 1936; The broken home as a causative factor in juvenile delinquency; (Chicago) Parental preference with respect to the sex of children; A study in attitude consistency of high-school seniors; A study of the social nature of daydreaming; (Social Service, Chicago) Some 'social' and 'emotional' problems of a group of tuberculous patients; A study of the children treated by the child guidance clinic of Bobs Roberts Hospital who

have suffered from pains without organic cause; Treatment evaluation of a group of child-guidance clinic cases; Delinquents and their siblings: A study of a group of cases referred to the children's probation project by the Cook County Juvenile Court; The school as a factor in treatment in a group of child guidance clinic cases; A community experiment in the prevention and treatment of juvenile delinquency; (Wisconsin) Juvenile delinquency among negroes in Houston, Texas; (Iowa) A study of juvenile delinquency in Iowa City; Juvenile delinquency among negroes; (North Carolina) Marriage adjustment as a condition of marital happiness; (Michigan State) A sociological study of moral and social attitudes of high-school and college students; (Fisk) The personality of servants with special reference to the negro; (Western Reserve) Juvenile delinquency in Tremont School.—F. G. Allen (Brown).

873. [Anon.] **What do you think?** *Eug. News*, 1937, 22, 91-92.—A survey reported in the magazine *Fortune* revealed (1) that 54.3% of the people interviewed are opposed to easy divorce, (2) that 46% of the same group think marriages are more likely to be successful when the partners are youthful and the man older than the woman, (3) that residents of large cities are more in favor of early marriages, (4) that rural communities favor the marriage of a woman with a man who is her senior in age. Tabulations of statistics on these questions are reported. A study by the Metropolitan Life Insurance Company "found that a man of 25 chooses on an average a wife of 22.3 years of age. At 30 he marries one of 24.9; at 35 one of 27.8; and at 40, one who is 31.9 years old. An older woman tends to marry a man of her own age."—M. V. Louden (Pittsburgh).

874. [Anon.] **Tests proposed in mental capacity for immigrants.** *Eug. News*, 1937, 22, 93.—Clairette P. Armstrong has proposed an amendment for future immigration control bills which are being considered by Congress. The amendment would require an examination by an American psychologist of everyone seeking an immigration visa. The use of the Stanford-Binet test, translated into the native tongue, and the Army individual performance test is prescribed for adults; either the Kuhlmann or the Gesell scale for children under 3 years of age; and the Stanford-Binet for all others. Visas should not be issued to (1) adults whose mental age is less than 14 years on the Binet or less than 12 years on the performance test, (2) children between 10 and 16 years of age whose mental age is more than one year retarded, (3) children between 3 and 10 years of age whose mental age is more than 6 months retarded, (4) children under 3 years of age whose mental age shows any retardation.—M. V. Louden (Pittsburgh).

875. [Anon.] **How to detect propaganda.** *Pro-pag. Anal.*, 1937, 1, 1-4.—This monthly letter designed to help the intelligent citizen detect and analyze propaganda is concerned with listing, illustrating, and discussing seven devices common in propaganda. These devices are: name calling, glittering generalities, transfer, testimonial, plain

folks, card stacking, and band wagon. For example, "name calling" is a device to make us form judgments without examining the evidence upon which they are based; "transfer" is a device by which the propagandist carries over the authority and prestige of something we respect to something he would have us respect; "card stacking" is a device by which the propagandist makes the truth difficult to discover so that we will accept his statements. All of these are designed to work upon our emotions for the advantage of the propagandist.—F. A. Mote, Jr. (Brown).

876. Bahle, J. *Gefühl und Wille im musikalischen Schaffen*. (Emotion and volition in musical creation.) *Ber. 16. Kongr. dtsch. Ges. Psychol., Jena, 1936, 194-196*.—Emotions have two dynamic functions: productive moods (influenced by the environment) and creative moods (subjective feeling states). In addition there are productive experiences which consist of emotional, perceptive and conceptual factors. Volitional impulses are necessary dynamic factors, as is a definite, schematic anticipation of the goal to be attained. Inspiration and revelation do not occur without previous preparatory and selective activity. They represent culmination points in a continuous mental process, in which productive experiences are combined with the will to create and with artistic understanding.—H. Beaumont (Kentucky).

877. Bahle, J. *Persönlichkeit und Kunstwerk im zeitgenössischen Musikschaffen*. (Personality and art in contemporary music.) *Z. Psychol., 1935, 135, 131-155*.—With reference to the much discussed relationship between personality and type, the author studies two well-known composers and their manner of treating the same (intellectual) theme. Comparative examples of their musical treatment are given.—G. F. J. Lehner (Brown).

878. Bartlett, E. N. *Types of aesthetic judgment*. Chicago: Univ. Chicago Press, 1937. Pp. 240. \$2.50.—A discussion of the main problems of aesthetics, approving the method of discarding theory and beginning afresh with the facts presented to direct experience.—R. R. Willoughby (Brown).

879. Blanton, S., Chesher, E. C., & Raubicheck, L. *Speech defects*. *J. Pediat., 1937, 11, 311-320*.—Round table discussion on speech defects at the seventh annual meeting of the American Academy of Pediatrics, June, 1937.—R. R. Willoughby (Brown).

880. Bodenheimer, F. S. *Population problems of social insects*. *Biol. Rev., 1937, 12, 393-430*.—Modes of reproduction, longevity, division of labor and the foundation of territories by nests of termites, ants, social wasps, humble bees and social bees are discussed. The growth of all social insects follows a logistic curve, resembling that of organisms, which is divided into three main periods: (1) an initial period of colony foundation, (2) a period of expansion and vigor, and (3) the period of senescence and death.—M. A. Rubin (Worcester State Hospital).

881. Buret, L. *Valeur gnoséologique de la discussion*. (The gnosiological value of discussion.) *J. Psychol. norm. path., 1937, 34, 199-215*.—The author's aim is to examine the role of discussion in achieving successive approximations to universal truth. He concludes that by means of discussion, socially organized and in its disciplined and dialectic aspect, we are able to formulate an objective expression of the reality within us and around us.—R. E. Perl (New York City).

882. Cattell, R. B., & others. [Eds.] *Human affairs*. New York: Macmillan, 1937. Pp. 370. \$4.25.—Essays by 14 scientists on humanity—what the social sciences can do for man, the planning of his future, and the making of a new human race. Biographical sketches and a photograph of each contributor are included.—R. R. Willoughby (Brown).

883. Combes, M. *Existence probable d'une élite non différenciée d'aspect, constituant les véritables ouvrières chez les Formica*. (The probable existence of a special group, not differentiated in appearance, which constitute the true workers in *Formica*.) *C. R. Acad. Sci., Paris, 1937, 204, 1674-1675*.—Basing conclusions on studies made from 1928 to 1936, the author predicates the existence of individual ants which are especially active in a group of workers. These are not differentiated in appearance from the other workers, but they are able to activate the otherwise inactive mass according to conditions which have not yet been determined. A further problem to be solved is the duration of inaction in a selected group in which no active individuals have been introduced.—G. Goldman (Sorbonne).

884. Firth, R. *We, the Tikopia. A sociological study of kinship in primitive Polynesia*. New York: American Book, 1936. Pp. xxv + 605. \$6.00.—The book emphasizes social structure, its kinship basis, and the extent to which kinship organization determines the behavior of individuals. It discusses social organization by showing how kinship functions, and centers the description and interpretation on one aspect of culture, but relates this aspect to other phases of the native life, such as land tenure, sex, initiation ceremonies, and dirges for the dead. Malinowski writes a preface. Firth distinguishes between "formal" or prescribed, and "informal" or more voluntary, behavior towards relatives. The former is compulsively expressed in explicit formulations, the latter comprises those "acts which are not a matter of obligation, but take place more or less spontaneously between the persons concerned." Both forms vary in intensity inversely with the nearness of the relationship, and differences in informal behavior depend, in addition, upon family differences, individual temperaments, residential arrangements, and the number of persons involved in the kinship situation. Psychologically the important point is that the forms of, and the attitudes underlying, interpersonal behavior must be correlated with various social phenomena. It is also claimed

that the functioning of kinship may "be used as the key to the interpretation of the disordered behavior of individuals in a state of dissociation." Firth's psychological analyses throughout are behavioristic rather than introspective: "I have concerned my analysis with the activities [of Tikopians]. . . . I have tried to reduce assumptions to a minimum, and in particular to discuss what the Tikopia do rather than what they think or feel. In the psychological field more than anywhere else in the study of uncivilized people, unverifiable postulates are apt to be introduced. . . . Kinship behavior rather than kinship sentiment is the study of the anthropologist."—*M. A. Mook* (Brown).

885. *Furfey, P. H. Three theories of society.* New York: Macmillan, 1937. Pp. 263. \$2.00.—*R. R. Willoughby* (Brown).

886. *Garth, T. R., & Garth, T. R., Jr. The personality of Indians.* *J. appl. Psychol.*, 1937, 21, 464-467.—269 educated Indian students (10th grade to second year college level) were found to differ significantly (mean score = 5.91) from white college students (score = 4.83) on the Allport A-S test. 101 white males were definitely more assertive (score = 6.44) than Indian males (score = 4.86), though the 129 white females (score = 5.48) did not differ significantly from the Indian females (score = 4.81). Considered as a group, the whites were more assertive than the Indians.—*A. B. Blankenship* (Psychological Corporation).

887. *Gemelli, A. La psicologia al servizio della cinematografia.* (Psychology in the service of the films.) Milan: Vita e Pensiero, 1937. Pp. 12, in reprint.—The function of the movie is to provide necessary escape and vicarious satisfaction by creating a dream state in which the instincts are satisfied without making the spectator aware that he is torn away from his own world. Hence its lacunae and logic sui generis are not objectionable unless they are so glaring as to awaken the critical powers. Much should be left to fantasy. The visual element is supreme and the auditory simply integrates it. An intuitive psychology will contribute more to the progress of film-making than advances in technique.—*M. E. Morse* (Baltimore).

888. *Greene, J. S. The stutter-type child.* *J. Amer. med. Ass.*, 1937, 109, 187-191.—Of 2203 patients, 50% suffered from stuttering and the rest from various forms of voice and articulatory conditions. Therapy of both types is discussed. The author rejects cerebral dominance as an explanation of stuttering and believes the most important determinant of stuttering to be the early childhood conditioning in the family situation.—*W. J. Brogden* (Johns Hopkins).

889. *Groos, K. Zum Problem der Tiersprache.* (Concerning the problem of animal expression.) *Z. Psychol.*, 1935, 134, 225-235.—Forms of expression in man may be of three types: (1) simple expression, not meant to be understood, (2) expression without reference to someone else, but understood by another when observed, and (3) expression meant

to communicate something. In animal life we find all types, but it is only the last form that can be compared with human speech. Animals, for instance, (1) are not able to separate their expressions from "inner affective states"; (2) their manner of expression is innate (in man speech is learned—"conventional signs"); but, most important of all, they are able (3) to "abbreviate" such innate expressions so that only part of a former reaction pattern suffices. Interesting relations to genetic psychology are pointed out.—*G. F. J. Lehner* (Brown).

890. *Guillaume, G. Thèmes de présent et système des temps français. Genèse corrélatrice du présent et des temps.* (The present and the system of tenses in French. Correlative genesis of the tenses.) *J. Psychol. norm. path.*, 1937, 34, 161-179.—This is a detailed study of the grammatical problems involved in the true nature of the present and its relationship to the past and the future.—*R. E. Perl* (New York City).

891. *Hartmann, K. J. Zur Psychologie der zwischenmenschlichen Kontaktbildung.* (Concerning the psychology of inter-human contact formation.) *Z. Psychol.*, 1935, 135, 164-191.—The author is concerned with the psychological basis of the relationship established between two (or more) individuals and the role of the psychological factors in the subsequent contacts. He discusses the reciprocally aroused state of general excitation (probably with emotional rather than ideational substratum), the canceling effect of antagonistic strivings (ideas, ideals, etc.) and the summative effect of mutually agreeable strivings.—*G. F. J. Lehner* (Brown).

892. *Holt, J. B. An analysis of methods and criteria used in selecting families for colonization projects.* *Rep. U. S. Dep. Agric. (soc. Res.)*, 1937, No. 1. Pp. 54. Mimeographed.—*R. R. Willoughby* (Brown).

893. *Janet, P. La psychologie de la croyance et la mysticisme.* (The psychology of faith and mysticism.) *Rev. Métaphys. Morale*, 1936, 3, 327-358; 4, 507-532; 1937, 2, 369-410.—Faith grows with the development of language. Primitive religions are based on very naive, sentimental and personal beliefs. As different beliefs are tested, they become objective and rational. Revolutionary mystics are individuals who feel the inadequacy of common faith and, aspiring to something bigger and more satisfying, destroy what they have without knowing what to erect on the ruins; their various efforts have contributed a great deal to the psychology of action. There is an important difference between mystics and psychasthenics, with whom they are often compared: the disturbances of psychasthenia are individual in character; those of a mystic have reference to humanity in general.—*G. Goldman* (Sorbonne).

894. *Kiessling, A. Die Gefühlslehre der deutschen Romantik.* (The emotional theory of German romanticism.) *Ber. 15. Kongr. dtsch. Ges. Psychol.*,

Jena, 1936, 102-103.—German romanticism culminated in Schleiermacher and ended with Schopenhauer, Nietzsche and Wagner. It developed out of two movements, the philosophical theory of the nineteenth century which recognized perceptive, appetitive and affective faculties (Kant), and the esthetic movement which emphasized the positive emotions of artistic creation and the concept of genius (Shaftesbury, Herder, Goethe). German romanticism combined these theories and thus arrived at the primacy of emotional life. This primacy was founded on its originality, its immediateness, its unity, and its predominance in respect to perception, creation and revelation.—*H. Beaumont* (Kentucky).

895. Pullias, E. V. **Masturbation as a mental hygiene problem—a study of the beliefs of seventy-five young men.** *J. abnorm. soc. Psychol.*, 1937, 32, 216-222.—This study revealed that 66, or 86.7%, of the young men had heard from one or more sources that masturbation has a seriously damaging effect upon those who practice it. All but 5 of the young men believed at the time they gave the information that the practice of masturbation has one or more types of harmful effects upon the individual. The opinions held by a fairly representative group of college men who participated in this study indicate that masturbation is a mental hygiene problem of considerable significance. The facts secured indicate that they have beliefs that produce both guilt and fear.—*C. H. Johnson* (Boston Psychopathic Hospital).

896. Rigg, M. **Musical expression: an investigation of the theories of Erich Sorantin.** *J. exp. Psychol.*, 1937, 21, 442-455.—This experiment is an investigation of the theories of Sorantin, who has listed certain musical features which he believes to be suggestive of five different emotions. 6 musical passages written especially for the experiment and 14 passages selected from the classics were played on the piano to 100 subjects to ascertain whether the emotions suggested are those to be expected on the basis of the theories. Responses were made first without the aid of any check list of suggested emotions, and second with the assistance of such a list. Analysis of the results shows that Sorantin's theory for joy has a large element of truth, and the same may be said for lamentation in the case of passages which are free from certain distracting features. The theories involving hopeful longing, sorrowful longing, and love are less certain. Thus passages supposed to represent hopeful longing frequently called forth responses for joy. The sorrowful longing passages likewise suggested either lamentation or calm in many cases. Passages supposedly depicting love produced many replies under the headings joy, hopeful longing, sorrowful longing, and calm. Responses are in part a function of the check list, although no contradictory results were found after introducing the list.—*H. W. Karn* (Pittsburgh).

897. Seltzer, C. C. **A critique of the coefficient of racial likeness.** *Amer. J. phys. Anthropol.*, 1937,

23, 101-109.—The coefficient of racial likeness is found to be in many respects defective in its construction, in theory, and in actual practice. Its use as a reliable technique is highly questionable.—*W. J. Brogden* (Johns Hopkins).

898. Shannon, J. R. **Geographical distribution of America's notables in education.** *Sch. & Soc.*, 1937, 46, 606-608.—There are 9006 educators listed in the 1936-7 edition of *Who's Who in America*. These have been classified into a college and other school group, and a table is printed showing the state in which they were born and the state in which they now are. Indiana and Iowa are chiefly producer states, California and the District of Columbia almost entirely consumer states, and New York, Pennsylvania, Massachusetts, and Ohio rank high as both producers and consumers. Nevertheless in these states not less than $\frac{3}{4}$ of the present educators are imported, showing the great mobility of educators in America.—*M. Lee* (Chicago).

899. Smith, M. **A comparison of white and Indian attitudes toward the negro.** *J. Negro Educ.*, 1937, 6, 592-595.—Two comparable groups each of approximately 100 high school students representing the white and Indian races were given Thurstone's scale for measuring attitude toward the negro. The results were compared with those obtained from 13 negro students, and indicate that the white and to a slighter degree the Indian subjects were less favorable in their attitude toward the negro, especially with respect to social equality and opportunity for association.—*W. E. Wallon* (Nebraska).

900. Tamaoka, S. [Musical talent tests.] *Jap. J. Psychol.*, 1937, 12, 309-321.—Of 619 subjects, 10 were university students, 281 belonged to girls' high schools, and 228 to a middle school. Six records of the Seashore test of musical talent were used in order to determine the sense of pitch, intensity, time, consonance, rhythm, and tonal memory. The author says that neither age nor sex is an important factor in determining the musical talent. The greatest mean variation found was in tonal memory and sense of pitch, while the lowest was in sense of intensity. The effect of training was not marked. It seems that sense of pitch and tonal memory are the two most important and fundamental criteria in the test of musical talent. English summary.—*R. Kuroda* (Keijo).

901. Trendelenburg, W., & Kägen, B. **Zur Kenntnis der Wirkung von künstlichen Ansatzrohren auf die Stimm-schwingungen.** (On the effect of artificial larynxes on voice vibrations.) *Arch. ges. Phonet.*, 1937, 1, Part II, 129.—*P. L. Krieger* (Leipzig/Munich).

902. Valentiner, T. **Der Wille zum Kinde.** (The desire for children.) *Ber. 15. Kongr. dtsch. Ges. Psychol.*, *Jena*, 1936, 164-165.—A survey was made by the questionnaire method of 140 married couples from different social levels, for the purpose of determining their desires with regard to the size of their families. Two-thirds of the group lived in cities.

In 78% of the cases the parents had been pleased when their children were born. As to their preference for family size, 3.6% stated no desire for children, 10.4% wanted one child, 46.9% two children, 27.3% three and 11.8% four or more. Their reasons for limiting the size of their families were: economic (but the coefficient of correlation between income and number of children desired was only .28); non-domestic employment of the wife; biological; too much trouble; fear of ridicule.—*H. Beaumont* (Kentucky).

903. Vetter, A. Gefühl und Wille im religiösen Erleben. (Emotion and volition in religious experience.) *Ber. 15. Kongr. dtsch. Ges. Psychol., Jena*, 1936, 189-193.—The prevalence of mysticism and idealism among the German people and their deep distrust of the value of pure cognition explain their religious feelings. The author has attempted to determine the value of individual religious experience by a method which was based on personal reminiscences, provoked by carefully chosen narratives, and a summary, carefully planned interview concerning the subjects' developmental processes. The change in religious attitude during adolescence is based primarily on the awakening sense of moral responsibility. Individuals who are preponderantly emotional develop religious experiences in the true sense of the word, whereas those whose volitional development predominates become more strictly moral. The former recognize a personal God, the latter are conscious of being the masters of their own destinies. Naturally in most individuals these two attitudes prevail at different times.—*H. Beaumont* (Kentucky).

904. Vivas, E. A definition of the esthetic experience. *J. Phil.*, 1937, 34, 628-634.—The esthetic experience is essentially a phenomenon of attention, the rapt and complete focusing of the attention upon the esthetic object. The esthetic differs from all other modes of attention in that it discovers in objects immanent meanings and they discover referential meanings. Emotion is a widely variable concomitant of the esthetic experience, so esthetic experience cannot be defined in terms of emotion.—*J. G. Miller* (Harvard).

905. Walton, W. E. The affective value of first names. *J. appl. Psychol.*, 1937, 21, 396-409.—Attitudes towards 18 common men's and 18 common women's names were secured from 100 men and 108 women by (1) the method of paired comparisons, and (2) the method of absolute judgments. Common first names do have affective values, which can be measured by the methods mentioned. The two methods gave similar results. There is little indication that the affective value of the name is related to affective value of the letters making up the name. A high degree of relationship was found between men's and women's preferences.—*A. B. Blankenship* (Psychological Corporation).

906. Watson, G. Orientation. *Soc. psychol. Stud. soc. Issues Bull.*, 1937, 2, Suppl. Pp. 7.—This is a reprint of the presidential address of the Society

for the Psychological Study of Social Issues, in which the practice of "rugged individualism" as a research method is referred to as outmoded and the orientation of the society as directed definitely toward cooperative research is insisted upon. A research program comprising 7 areas is outlined. These are group thinking, public opinion, planning, social forces, leadership, the state, and American fascism.—*F. A. Mote, Jr.* (Brown).

907. Wellek, A. Die Mehrseitigkeit der "Tonhöhe" als Schlüssel zur Systematik der musikalischen Erscheinungen. (The complexity of pitch as the key to the system of musical phenomena.) *Z. Psychol.*, 1935, 134, 302-348.—Besides undertaking a critical survey and extension of von Hornbostel's theory of auditory phenomena, the author discusses the phenomenology of melody, the multi-component theory of clang, and the perception of tonal characteristics.—*G. F. J. Lehner* (Brown).

[See also abstracts 678, 728, 730, 768, 800, 807, 809, 810, 821, 849, 861, 868, 914, 944, 951, 952, 966, 972, 979, 980, 981, 987, 989, 998.]

CRIME AND DELINQUENCY

908. Alper, B. S. Juvenile justice: a study of juvenile appeals to the Suffolk Superior Court, Boston, 1930-1935. *J. crim. Law Criminol.*, 1937, 28, 340-367.—The modus operandi of this court is described.—*L. Ackerson* (Illinois Institute for Juvenile Research).

909. Brubaker, E. A. Behavior clinics and the administration of justice. *Ment. Hlth Bull. Penn. Dep. Welf.*, 1937, 15, 16-18.—*R. R. Willoughby* (Brown).

910. Foxe, A. N. Resistance to the understanding of criminotic behavior. *Psychoanal. Rev.*, 1937, 24, 389-391.—It is noted with surprise that the problem of crime remains one of the least studied by the analysts, despite the fact that two major criminoses, incest and parricide, lie at the base of the psycho-analytic theory. It is suggested that this may be due to a deep resistance to the understanding of the criminotic individual. The question is raised whether we are not all latently more criminotic than has hitherto been believed, and the possibility is suggested that men will eventually "face with equal or even greater horror their own aggressiveness, as they are only beginning to face their sexuality."—*L. S. Selling* (Recorder's Court, Detroit).

911. Gentz, W. Zur Rückfallskriminalität der Frauen in England. (Habitual female delinquency in England.) *M Schr. Krim Biol.*, 1937, 28, 413.—In England the proportion of habitual criminals is about the same for both sexes, with the exception of alcoholic offenses (68.31% for men, 70.48% for women). When previous prison records alone are considered, the women are in a somewhat more favorable position than the men (44.17% and 51.33% respectively), but when all sentences are included, the women far exceed the men, with respectively 95.68% and 76.32% of all prison in-

mates. In alcoholic cases 80.84% of the female and 63.35% of the male prisoners had received previous prison sentences. Alcoholism is more widely spread among English women of lower social classes, especially those past middle age, than in other countries. Until the age of 30 there is a prevalence of males in English prisons, between 30 and 40 the two sexes are about evenly balanced, but after 40 women predominate (53.38% women, 34.91% men).—*P. L. Krieger* (Leipzig/Munich).

912. **Kempe, G. T.** Een vergelijkend onderzoek naar de criminaliteit in de gemeente Amsterdam en het arrondissement Utrecht over de jaren 1923-1927. (A comparative study of delinquency in the city of Amsterdam and the county of Utrecht during the years 1923-1927.) *Mensch en Maatsch.*, 1937, 13, 325-337.—The concluding article in this series, Prison sentences accounted for 72.5% and 50.1% of all convictions for men and women respectively in the city, and for 44.1% and 20.9% in the county. Repeaters tended to receive longer sentences than first offenders in the city, shorter in the county. Repeaters committed their first offenses most frequently before the age of 20 in the county, between 20 and 29 in the city. Alcoholism was more prevalent among those receiving longer sentences, while the period between sentences varied inversely with the length of the sentences. In city and county, stealing was the most frequent crime of youthful offenders (80.3% and 78.2% respectively), who came from incomplete homes in 18.3% and 22.4% of the cases respectively, while 4.7% and 6.9% respectively were illegitimate children. In the city 26.6% were put on probation, in the county 12.6%. Placed in the hands of the government were 62.5% of the youthful offenders in the city, only 18.8% of those in the county.—*H. Beaumont* (Kentucky).

913. **Korytowska, M.** Krzywda dziecka i jej wpływ na przestępczość młodzieży. (Injustice in childhood and its influence on juvenile delinquency.) *Kwart. psychol.*, 1937, 9, 203-263.—357 normal and delinquent girls with CA 16 to 21, in schools in Belgium, Poland and Switzerland, were given a short questionnaire on their recall of childhood experiences. It was found that the juvenile delinquents had a childhood filled with feelings of injustice, bitterness and insecurity, without compensating factors in their emotional life, to a greater degree than did the normal children.—*T. M. Abel* (Trade Extension Classes, New York City).

914. **Schneikert, H.** Selbstmörderbriefe. (Suicides' letters.) *Arch. Kriminol.*, 1937, 101, 65-70.—Last letters by apparent suicides are an especially easy method of concealing real crimes. Furthermore, relatives may forge such communications for religious reasons or to conceal family skeletons, and without criminal intent. In such cases no questions of property or insurance are involved. They may wish to represent an accident (e.g. fatal abortion) as suicide, or protect a dead person who has committed a crime. Every suicide letter should be sent to a central bureau (preferably a university institute for

legal medicine) for study by a graphologist, and retained there. An invaluable collection from the standpoint of both pathological handwriting and psychology would thus result. It is very difficult to differentiate from forgery the abnormal handwriting of a person about to commit suicide.—*M. E. Morse* (Baltimore).

915. **Simon, R.** Alfred Adlers Bedeutung für die Strafrechtswissenschaft. (Alfred Adler's meaning for penology.) *Int. Z. indiv. Psychol.*, 1937, 15, 162-166.—Adler saw in the criminal just another human being who had erred through insufficient community feeling. Community feeling is inherent in the criminal as in all other human beings, but it is narrowed or undeveloped. Judges, like Ben Lindsay, who have followed Adler's thinking have succeeded in reforming delinquents. The criminal needs not weak sentimentality but awakened responsibility and above all encouragement, for all criminals are cowardly and seek to calm their feeling of weakness by bold deeds. The fight against criminality must begin in earliest childhood. The mother must seek to include first the father, then other children in the circle of the child's friends.—*M. F. Martin* (W. Springfield, Mass.).

916. **Timasheff, N. S.** The retributive structure of punishment. *J. crim. Law Criminol.*, 1937, 28, 396-405.—The "socio-cultural reflex of crime and punishment" was originally based upon the motive of retaliation. The principle has been sublimated from that of consideration of the individual victim to that of social dangerousness, and in modern times to the concept of reformation.—*L. Ackerson* (Illinois Institute for Juvenile Research).

[See also abstracts 782, 975, 976.]

INDUSTRIAL AND PERSONNEL PROBLEMS

917. **Adams, C. R., & Smeltzer, C. H.** The personal interview in objective employment. *Personnel*, 1937, 14, 61-65.—Describing the interview as that part of the employment procedure which cannot be subjected to objective testing, the authors demonstrate how the results of a careful interview can be stated in a quantitative manner.—*J. H. Taylor* (Procter & Gamble).

918. **Anglin, B. H.** The older employee. *Personnel*, 1937, 14, 75-83.—The idea that industry must discard the older employee is definitely rejected. By carefully selecting the employee, by training for prolongation of productivity, by intelligent analysis of jobs, and by anticipating years in advance the ultimate necessity of placing the older employee in a less demanding occupation, the problem of placing and retaining the older employee becomes one of well-planned management.—*J. H. Taylor* (Procter & Gamble).

919. **Becker, F.** Mensch und Industrie. (Man and industry.) *Ber. 15. Kongr. dtsh. Ges. Psychol.*, Jena, 1936, 227-232.—Skilled occupations in the heavy steel industry and industrial plants requiring

mechanical and optical precision attract workers of widely differing personalities which appear to be well adjusted to the requirements of the respective jobs. Unskilled labor in the heavy steel industry is not in such a favorable position.—H. Beaumont (Kentucky).

920. Delaville, G., & Lahy, B. *Enquête psychophysiologique sur la fatigue des conducteurs de poids lourds.* (A psychophysiological investigation of fatigue in drivers of heavy loads.) *C. R. Soc. Biol., Paris*, 1937, 124, 1311-1314.—The writers investigated the objective indications of fatigue in two drivers of heavy loads. These two individuals exhibited very different physiological recuperative capacity; recuperation was instantaneous in the one case, while the other person was not able to throw off the results of his fatigue.—M. H. Piéron (Sorbonne).

921. Elliott, F. R. Attention effects from poster, radio and poster-radio advertising of an exhibit. *J. appl. Psychol.*, 1937, 21, 365-371.—A field investigation was carried on at a fruit exhibit in the Indiana State Fair. Attempts to secure attention from 25,443 visitors were made with each subject in one of three ways: (1) poster presentation of "talking points," (2) auditory presentation of points (loud speaker), or (3) a method combining poster and auditory presentation. The combined method was most effective (having attracted 33.4% of 6579 subjects), followed by auditory (32.1% of 6596 subjects), and poster (25.4% of 5701 subjects) respectively, while no advertising was in last place (19.9% of 6567 subjects).—A. B. Blankenship (Psychological Corporation).

922. Isbell, E. C. Mobility of employment of young people in Meriden, Connecticut. *J. educ. Res.*, 1937, 31, 188-198.—A census of 710 persons between the ages of 14 and 30 years indicates that it is increasingly difficult for young persons leaving school to find and retain employment.—S. W. Fernberger (Pennsylvania).

923. Kreipke, K. Eine Stellungnahme zu einzelnen Willenstheorien von der wehrmachtpsychologischen Praxis aus. (A reaction to certain theories of volition on the basis of psychological experience in the army.) *Ber. 16. Kongr. dtsch. Ges. Psychol., Jena*, 1936, 158.—Many students of volition have lost sight of the practical activities of man, which should constitute the basis of their theories. The army psychologist is forced to examine critically such concepts as: strong-willed vs. weak-willed, will-power as an independent personal constant, volitional hurdles, the neutrality of volition, and the subjectivity of volitional concepts. To be valid, these should represent essential and actual aspects of human behavior.—H. Beaumont (Kentucky).

924. Lahy, J. M., & Korngold, S. *Recherches expérimentales sur les causes psychologiques des accidents du travail.* (Experimental studies on the psychological causes of work accidents.) Paris:

Conservatoire National des Arts et Métiers, 1937. Pp. 76. Fr. 20.—According to the authors, measures for the selection of individuals looking toward prevention of accidents depend not so much upon the determination of motor ability as upon the determination of the mental, emotional, and affective state of the subject. Propensity to accident is due to the individual's inability to adapt to a demanded speed or to an unnatural rhythm of work. The recommended examination takes an hour and a quarter: diffused attention (45 min.), concentrated attention (15 min.), aiming test (10 min.), and auditory reaction time (5 min.). These tests have enabled the authors to place 60% of subjects who were prone to accidents in jobs not involving risks. Various other aspects of the subject are discussed, such as predisposition to accident (with statistical and experimental data) and fatigability.—M. H. Piéron (Sorbonne).

925. Metz, P. Die Orientierung beim Fliegen. (The orientation of aviators.) *Ber. 16. Kongr. dtsch. Ges. Psychol., Jena*, 1936, 207-208.—The experience of altitude (based on proprioceptive stimulation) often contradicts the visual perception of altitude. The aviator must overcome this discrepancy by a particular form of readjustment, the success of which depends on the magnitude of the discrepancy and on individual ability, which constitutes an important factor in aeronautical capacity. In addition to this situation, in which the aviator is aware of the fact that his proprioceptive impression is "wrong," there occurs a real disorientation which takes place when visual orientation is impossible, as in blind flying or when the aviator experiences dizziness.—H. Beaumont (Kentucky).

926. S(cheidt), V. P. The effect of various modifications on the worker. *Kalends*, 1937, 16, 3-4.—This article discusses the effects of introducing a 6-hour daily schedule for workers in a printing establishment. After a preliminary period of greater inefficiency, loss of production, more errors, etc., work was so improved that the 6-hour schedule is considered beneficial. Noise reduction was also tried by means of noise-proofing a whole composing room and putting workers in individual noise-proof booths. A reduction of errors was found.—F. A. Mole, Jr. (Brown).

927. Shepard, J. L. Recognition on the job. *Person. J.*, 1937, 16, 111-119.—Human individuals need recognition. This need can be met by praise, regular salary reviews, and other techniques that make the worker feel that he is treated as an individual. As a result he is happier and is a more valuable employee. This paper is a chapter in *People at Work*, to be published by Harper.—H. Schlosberg (Brown).

928. Simoneit, M. Zur Willensforschung bei wehrmachtpsychologischen Eignungsuntersuchungen. (The study of volition in connection with psychological ability tests in the army.) *Ber. 16. Kongr. dtsch. Ges. Psychol., Jena*, 1936, 157.—It is

necessary to investigate volitional ability as well as volitional willingness, volitional methods and volitional strength if prognostic values are to ensue from an ability test. Thus psychological tests in the army consist of analyses of the individual's case history, his methods of expression, his mentality and his behavior.—*H. Beaumont* (Kentucky).

929. Tindall, G. M. Rhythm for the restless. *Person. J.*, 1937, 16, 120-124.—After a short summary of certain technical and popular papers, the writer points out the value of music in industry "for the pleasure of the employed and the profit of the employer." Such problems as the choice of appropriate records to be played during work, or the development of a program of active recreational music, must be solved by the individual employer or personnel department. Thus the tempo of music that is to be played during work must be appropriate for the task, if any substantial gain in output is to be obtained. Music may speed up production, improve morale, pacify labor unrest, create good will, lessen labor turnover, reduce error, etc.—*H. Schlossberg* (Brown).

930. Wirth, W. Ein psychophysischer Beitrag zur Untersuchung und Einübung des Schiessens mit der Handfeuerwaffe. (A psychophysical contribution to the measurement and development of sharpshooting ability.) *Ber. 16. Kongr. dtsh. Ges. Psychol.*, Jena, 1936, 203-207.—A laboratory set-up of a shooting range, in which no ammunition was used and errors were recorded mechanically, enabled the author to predict sharpshooting ability with a fair degree of reliability (r ranged from .57 to .83). The same arrangement was useful in training sharpshooters, who showed more confidence and were less emotionally disturbed when shooting with ammunition than was the case with those who had received no preliminary training.—*H. Beaumont* (Kentucky).

931. Wonderlic, E. F. Training as a personnel function. *Personnel*, 1937, 14, 66-72.—An outline for an effective training program, such as that which the author conducts for the Household Finance Corporation, is described.—*J. H. Taylor* (Procter & Gamble).

[See also abstracts 594, 679, 681, 796, 932.]

EDUCATIONAL PSYCHOLOGY

(incl. Vocational Guidance)

932. [Anon.] The air conditioning engineer. *Occupations*, 1937, 16, 160-164.—Abstract of literature.—*R. H. Brown* (Clark).

933. Berglund, A. O. A reading vocabulary for the fourth grade. *J. educ. Res.*, 1937, 31, 172-180.—Statistical study of the occurrence of words in six basal readers for the fourth grade. A sample word list is appended.—*S. W. Fernberger* (Pennsylvania).

934. Brandenstein, B. Közoktatásügyünk pszichológiai elmélyítéseről. (The importance of psychology for the student.) *Lélektani Tanulmányok*, 1937, 1, 11-16.—It is necessary to place the peda-

gogical work of the school on a solid psychological basis, so as to train men, rather than only transmit facts. This can be done in two ways: (1) by the psychological development of applied pedagogy, and (2) by the formation of a school psychological organization. Specific suggestions are made on courses of study for teachers and school psychologists.—*P. Ranschburg* (Budapest).

935. Challman, S. A. Mental hygiene in the school child. *Minn. regist. Nurse*, 1937, 10, 10-12.—*R. R. Willoughby* (Brown).

936. Cozens, F. W., & others. Achievement scales in physical education activities, for secondary school girls and college women. New York: A. S. Barnes, 1937. Pp. 174. \$2.00.—*R. R. Willoughby* (Brown).

937. Davis, F. G., & Davis, B. E. C. Guidance for youth; a textbook. (New ed.) Boston: Ginn, 1937. Pp. 399. \$1.56.—*R. R. Willoughby* (Brown).

938. Eames, T. H. A study of the speed of word recognition. *J. educ. Res.*, 1937, 31, 181-187.—The speed of word recognition was studied in 90 cases, including both easy and difficult reading. Ten cases exhibiting reading disability were re-examined after treatment and showed considerable improvement. Normal cases showed considerably greater speed of word recognition than those with reading disability.—*S. W. Fernberger* (Pennsylvania).

939. Freeman, G. L. The value of written reports in demonstrational teaching before college classes. *J. educ. Res.*, 1937, 31, 211-213.—A study of written reports following class demonstrations in a course in psychology. A true-false examination showed the marked superiority of a group who had been asked to prepare for the demonstrations as against a control group who spent a minimum of time on this work.—*S. W. Fernberger* (Pennsylvania).

940. Friedmann, A. Die Kunst der individual-psychologischen Pädagogik. (The art of individual-psychology pedagogy.) *Int. Z. indiv. Psychol.*, 1937, 15, 150-152.—The pedagogy of individual psychology rests on an understanding of the child's mind. It combines scientific knowledge with empathy. It interprets the child as a complete being in terms of his possibilities. Adler saw in the child the artificer of his own life. The most important factors in bringing up a child are taking him seriously and valuing him. An understanding of needs is more important than a definition of the normal, but the normal may be defined as the "good comrade." The art lies in the self-restraint of the educator, the recognition of the independent activity of the child.—*M. F. Martin* (W. Springfield, Mass.).

941. Graybeal, E. The measurement of outcomes of physical education for college women. Minneapolis: Univ. Minn. Press, 1937. Pp. 88. \$1.00.—*R. R. Willoughby* (Brown).

942. Greene, E. B. Michigan adult profile: high school and college levels. Ann Arbor: Author, 1937. \$0.50 per package of 25, \$0.10 per copy.—

In order to compare the educational progress, interests, and tested achievement of an individual a battery of tests and estimates of the following types has been assembled: (1) educational advancement, (2) occupational preferences, (3) language, (4) motor coordination and spatial perception, (5) tests of special abilities. These measures and estimates have been scaled on the profile to show the subject's position in a standard group of second-year college students.—*M. Keller* (Brown).

943. **Greene, E. B. Michigan speed of reading test.** Ann Arbor: Author, 1937. \$1.00 per package of 25, \$0.10 per copy.—The test requires 7 minutes. Norms are quoted from the third grade to and including the college level.—*M. Keller* (Brown).

944. **Greene, E. B. Michigan vocabulary profile: forms I, II.** Ann Arbor: Author, 1937. \$5.00 per package of 25, \$0.25 per copy.—Each form consists of 8 divisions: human relations, commerce, government, mathematics, physical sciences, biological sciences, fine arts, sports. The battery is designed to give a profile of an adult's vocabulary in these fields of information, which are considered important and independent. Norms for college sophomores and tentative grade and educational norms are available.—*M. Keller* (Brown).

945. **Hartson, L. D. Vocational choices—before and after college.** *Occupations*, 1937, 16, 138-142.—Vocational choice, made during senior year of high school, corresponds well with later choice of major and statement of vocational interest during senior year of college and with vocational record after graduation at Oberlin College.—*R. H. Brown* (Clark).

946. **Held, O. C. A useful mathematics placement examination.** *Sch. & Soc.*, 1937, 46, 503-503.—Freshmen entering the University of Pittsburgh vary so greatly in their preparation in mathematics that many cannot make satisfactory progress in mathematics in college without remedial courses. It was found that those students with grades of D and F at the end of the first semester, scored on the arithmetic section of the American Council Psychological Examination 4.7 points below the group who attained grades of C or better. This therefore might serve as an initial placement test in mathematics, assuming that a low score indicates inadequate preparation.—*M. Lee* (Chicago).

947. **Keys, N., & Lawson, J. V. Summer versus winter gains in school achievement.** *Sch. & Soc.*, 1936, 46, 541-544.—Since conflicting results have been obtained regarding the effect of vacation on school achievement when practice effect or test conditions have not been controlled, a 3-year study was undertaken avoiding these sources of error. The results of achievement tests, administered routinely in September and May, were compared for all 4th to 8th grade children in a small town in Minnesota. In the 492 cases the following results were obtained: There is as great a gain in knowledge of literature in the summer as in the winter, and nearly as great in command of English. Punctuation, science, arithmetic, spelling and geography all

show a loss over the summer, amounting in arithmetic to 4.2 months of the previous winter's gain. The question is raised whether these losses indicate that the subject matter is unsuitable or vacations inadvisable. A warning is also given against depending upon fall achievement tests for placement of new pupils.—*M. Lee* (Chicago).

948. **Main, Z., & Horn, E. A. Empirically determined grade norms as a factor in the educational maladjustment of the "average" child. Part II. The age-grade status of children in the 90-109 IQ group.** *J. educ. Res.*, 1937, 31, 161-171.—Statistical study of the age-grade placement of 866 pupils with IQ's in the range 90-109 for one group and 110 or over for the other. A third group was also considered for whom the authors had progress data for six complete grades. Comparison of the first two groups are made for the age at entering grade B1. The study shows "that though a large proportion of children in the 90-109 IQ group enter school as early as they may and so constitute a large at-age group at the beginning, yet each successive grade shows a steadily decreasing proportion of at-age pupils and a similarly increasing proportion of pupils who are one, two, three and even four years over age."—*S. W. Fernberger* (Pennsylvania).

949. **Martins, E. H., & Reynolds, F. E. An annotated bibliography on the education and psychology of exceptional children.** *U. S. Off. Educ. Pamphl.*, 1937, No. 71. Pp. 41.—This is the third bibliography dealing with exceptional children which has been issued by the Office of Education, and gives references of a general nature dealing with several or all types of exceptional children and the administration of special education as a whole. There are eight sections, each devoted to the consideration of a major group of exceptional children.—(Courtesy *J. educ. Res.*)

950. **Ombrédane, A., Soares, N., & Canivet, N. Les inadaptés scolaires.** (Unadjusted school children.) *Actual. sci.*, 1936, No. 440. Pp. 84.—This study continues the discussion advanced in *Le Problème des Aptitudes à l'Age Scolaire* (see XII: 554). It consists of an analysis of the results obtained from an investigation of 21 school children who were unadjusted in their school life and retarded in their studies. The investigation, which is relatively complete from a psychiatric point of view, consisted of an age test (Binet-Simon), an educability test (Ombrédane), an attention test (Piéron), and a character test (Rorschach). There are three main parts in the article: the general results obtained; individual results; and the factors causing scholastic lack of adjustment. These factors consist of obstacles in the impulsive life of the child which cause failure in integration of school duties (attitude of passive or active opposition between familial authority and the collective esprit de corps of his comrades); defects in intellectual advancement (difficulty in abstraction, need of concrete examples, attention to details, slowness of growth in intellectual activity); and lack of adjustment of the child's

intellectual activity to his school tasks (inattention) and lack of persistence (fatigability).—*G. Goldman* (Sorbonne).

951. **Outland, G. E.** Educational backgrounds of transient negro boys. *J. Negro Educ.*, 1937, 6, 595-600.—A study was made of the educational attainments of 317 transient negro boys who registered at the Los Angeles Bureau of the Federal Transient Service during one year. A comparison with 3035 native and foreign-born white transients indicate "that the negro boys as a group ranked a bad third." A consideration of the facts obtained in case history studies show that "one more powerful argument has been offered to the ever accumulating mass of evidence showing the necessity of better educational facilities in rural communities."—*W. E. Walton* (Nebraska).

952. **Pace, C. R.** Handedness and reading ability in high school and college students. *J. educ. Res.*, 1937, 31, 205-210.—Handedness was determined by the Minnesota speech clinic laterality questionnaire and reading ability by the Minnesota reading examination and the speed of reading test for 2000 students at the University of Minnesota (mostly freshmen) and for 1000 students in two high schools. The results show "that among high school seniors and college students, being shifted, ambidextrous, or left-handed is not accompanied by any significant inferiority on the reading examination, but it does appear to be related to some inferiority on the speed of reading test."—*S. W. Fernberger* (Pennsylvania).

953. **Ruttman, W. J.** Untersuchungen zur psychologischen Praxis der Schulerbegutachtung. (A study of the psychological practice of judging students.) *Ber. 15. Kongr. dtsch. Ges. Psychol.*, Jena, 1936, 243-247.—Student selection is practised systematically by 59% of the high schools in Germany, in unsystematic fashion by 27%, and not at all by 14%. The author makes a plea for the rational development of a psychological procedure whereby students may be selected.—*H. Beaumont* (Kentucky).

954. **Seidler, R.** Alfred Adler als Erziehungsberater. (Alfred Adler as educational counselor.) *Int. Z. indiv. Psychol.*, 1937, 15, 159-162.—Adler's counseling usually took place openly in his lecture auditorium among his pupils. Before the child and his parents appeared, the classroom teacher read the case history. As Adler then interpreted the child's errors, all thought of "guilt" or "punishment" disappeared in an atmosphere of understanding. Then the parents came in. Adler immediately put them at ease. Never did the author hear Adler reproach a father or mother. He always limited himself to pointing out the error of the child and the ways of helping it. Then the parents went out and the child came in. Adler always succeeded in getting the child to understand his mistake, and he never forgot to stimulate the child's social feeling.—*M. F. Martin* (W. Springfield, Mass.).

955. **Simmons, M. P.** Changing conceptions of major topics in general science textbooks (1911-1934). *J. educ. Res.*, 1937, 31, 199-204.—Analysis of four textbooks for each of the periods 1911-1916, 1917-1923, 1924-1928, and 1929-1934. Page percentages for each of 16 topics commonly treated in all of the texts are given.—*S. W. Fernberger* (Pennsylvania).

956. **Skaggs, E. B.** Psychological studies in grades and high school. *Sch. & Soc.*, 1937, 46, 598-599.—If psychology can give an understanding of human motives, habits and attitudes it might be of practical help to students who are learning to adjust themselves to life situations. Courses in psychology might well be given in high school stressing human relations and methods of learning. For such courses the author hopes texts will some day be written and teachers trained.—*M. Lee* (Chicago).

957. **Spiel, O.** Individualpsychologie und Schule. (Individual psychology and school.) *Int. Z. indiv. Psychol.*, 1937, 15, 152-159.—Individual psychology regards community education not as a mere training of children to orderly, frictionless working together or as a mere suppression of aggressive tendencies. The individual should be trained to feel himself imbedded in a really existing group and to take an actively helpful attitude toward the other individuals. A class group too often takes the attitude of a stern judge. The teacher can guide the class to understand each other's mistakes and sympathetically encourage each other to correct them. Often, when children enter school, community feeling is either lacking or else too narrow because of family egoism. School should widen the sympathies and strengthen the courage of the children.—*M. F. Martin* (W. Springfield, Mass.).

958. **Waller, G. A.** The occupational orientation inquiry. *Sch. & Soc.*, 1937, 46, 507-510.—One of the most difficult tasks of a vocational counselor is to convince an individual that he has chosen an occupation to which he is unsuited and in which he has little chance of succeeding. The occupational orientation inquiry, adapted to lower occupational levels, by evaluating other factors as well as interest makes possible a more intelligent self-analysis and furnishes a basis for discussion in subsequent vocational interviews. 225 occupations are listed; the subject rates himself regarding degree of knowledge, interest, ability, and opportunity for placement in each job. He also gives a history of his vocational interests and experiences, his own evaluation of the data, and his conclusion. Various research problems are in progress concerning the interrelations and significance of the ratings.—*M. Lee* (Chicago).

959. **Williamson, E. G.** College grades and NYA scholarships. *Sch. & Soc.*, 1937, 46, 510-512.—It has been reported that federal-aid students obtain on the average higher grades than other students, but it has not been shown whether this is due to superior scholastic aptitude or motivation. At the University of Minnesota 94 federal-aid students

were paired as to ability with a control group. No significant difference was found between the groups in college grades, though both were superior to another control group not paired as to ability. The conclusion is that the federal-aid students obtain higher average grades not because of the motivating effect of the work scholarships but because they are selected on the basis of superior aptitude. The NYA system is thus an effective means of conserving human ability.—*M. Lee* (Chicago).

[See also abstracts 595, 820, 898, 922, 991, 999.]

MENTAL TESTS

960. Arthur, G. The predictive value of the Kuhlmann-Binet scale for a partially Americanized school population. *J. appl. Psychol.*, 1937, 21, 359-364.—In a city composed of 75% foreign-born, Kuhlmann-Binet tests had been given to a group of kindergarten children. Seven years later, the Kuhlmann-Anderson test was administered to 48 of the group. A comparison of the results of the retest with the first test revealed high consistency where the child had had as much as a year in an English-speaking environment. Test results for each testing were classified into borderline (IQ 75-84), dull (85-94), average (95-104), bright (105-114), etc. It was found that 46.6% of the cases obtained the same classification, 46.6% showed a change of one step only, and 6.8% showed a change of as much as two steps in classification.—*A. B. Blankenship* (Psychological Corporation).

961. Atwell, C. R. Relationship of scores and errors on the army alpha test. *J. appl. Psychol.*, 1937, 21, 451-455.—With 2360 male subjects a straight line relationship was found between army alpha scores and errors. With 1925 males the same relationship was found between scores and errors on Wells' revision of army alpha. In both cases graphs are presented showing the relationship, but no correlation coefficients are given.—*A. B. Blankenship* (Psychological Corporation).

962. Brown, A. J. Mental tests. *Canad. publ. Hlth. J.*, 1937, 28, 378-382.—*R. R. Willoughby* (Brown).

963. Burr, E. T., & Metcalfe, Z. I.E.R. assembly test; revised norms based on short form. *J. appl. Psychol.*, 1937, 21, 372-378.—Using approximately 900 test scores of applicants at the Vocational Adjustment Bureau and New York City school pupils, it was found that there was a correlation coefficient of close to zero between chronological age and G.M.A. (girls' mechanical assembly test) score, while a coefficient of approximately .40 resulted when G.M.A. scores were correlated with intelligence (either MA or IQ). On this basis the authors conclude that norms for the test should be based on MA rather than CA, and present them in this form. Decile norms for the short form are given for mental ages from 8 to 16.—*A. B. Blankenship* (Psychological Corporation).

964. Greene, E. B. The Michigan non-verbal series (1937 revision). Ann Arbor: Author, 1937.—This is a non-verbal pencil test series designed to measure (1) hand and eye coordination, and (2) observation and reasoning on non-verbal tasks which require a wide range of problem-solving ability but which are influenced as little as possible by cultural backgrounds. The tests have been planned to predict certain vocational and educational skills. They have been used with normals, the deaf, speech defectives, mixed language groups, and for laboratory studies of learning and motivation. Four equivalent forms are available.—*M. Keller* (Brown).

965. Teagarden, F. M. A method of interpolating Kent oral emergency test scores into mental age years and months. *J. appl. Psychol.*, 1937, 21, 468-473.—In an earlier issue of the Journal (February 1937) an article by Burchard and Teagarden on "An Evaluation of the Kent Oral Emergency Test" had interpolated the Kent mental age into years and months, though the original Kent monograph transmuted scores only into years. In the present article the author explains her method of interpolation, in which she began by assigning the mid-point value for each age level as the equivalent of 6 months in terms of age credit.—*A. B. Blankenship* (Psychological Corporation).

[See also abstracts 732, 967.]

CHILDHOOD AND ADOLESCENCE

966. [Anon.] Child psychology and religion; by a teacher of those who teach religion. New York: P. J. Kenedy, 1937. Pp. 156. \$0.60.—*R. R. Willoughby* (Brown).

967. Baxter, E. D. The Baxter child personality test. *J. appl. Psychol.*, 1937, 21, 410-430.—Causes of behavior not conducive to the mental health and growth of children are important to ascertain. In order to overcome many of the difficulties common in rating scales, a test containing both questions for the child and questions for the mother was developed by the author. The test was administered to 49 boys and 51 girls in Denver. Both the girls' and the boys' forms possessed high reliability (split-half method, $r = .91$) and high validity (r with parents' ratings = .81). The mother's test also showed high reliability ($r = .92$) and high validity ($r = .83$). Though the test correlated more highly with MA (.56) than CA (.24), norms are presented by age levels, from 4 to 13 years. No sex differences were apparent.—*A. B. Blankenship* (Psychological Corporation).

968. Cousinet, R. La fabulation chez les enfants. (Fabulation in children.) *J. Psychol. norm. path.*, 1937, 34, 179-199.—After examining in detail several fictitious stories reported by his child, the author proposes the hypothesis that fabulation and scientific curiosity are two aspects of the same mental activity, and that fabulation is a sign of the need for information. It reveals some aspects of the mechanism of precaution, and also shows attachment to a childish

mode of life on the one hand and a desire to acquire an adult attitude or to progress on the other. One reason a child lies instead of asking for information is the fear of insufficient or purposely false responses from the adult in reply to questions. But the basic point is that fabulation constitutes for the child a satisfaction of a need. It is an essential condition for the development of personality and it is a form of pleasure.—*R. E. Perl* (New York City).

969. **Cuff, N. B.** *Child psychology*. Louisville: Standard Printing Co., 1937. Pp. 299. \$2.50.—An elementary undergraduate text in child psychology. 15 chapters, selected in terms of what "teachers and students of child psychology think should be included," are each followed by discussion questions, selected experiments, new-type questions and references.—*L. J. Stone* (Sarah Lawrence College).

970. **Debesse, M.** *Comment étudier les adolescents. Examen critique des confidences juvéniles*. (How to study adolescents. A critical examination of juvenile confidences.) Paris: Alcan, 1937. Pp. 170. Fr. 20.—The author studies the main trends in hebology (his term for the study of youths between the ages of 12 and 20) and examines the questions of juvenile introspection, spontaneous confidences, remembrance of one's youth in response to questionnaires, etc. It is possible to study the evolution of consciousness in young people through their spontaneous confidences and to analyze the mental content through the use of questionnaires. In the appendix the author gives extracts from the intimate journals of adolescents and also a group questionnaire which he used in his study of the crisis in juvenile originality (see XII: 971).—*M. H. Piéron* (Sorbonne).

971. **Debesse, M.** *La crise d'originalité juvénile*. (The crisis in juvenile originality.) Paris: Alcan, 1937. Pp. 440. Fr. 35.—One of the most striking observations to be made on adolescents is their desire for originality. Young people are loath to be like everyone else; they desire to be exceptional and have a horror of banality. The author thinks that this peak in juvenile originality, in its last analysis, can be considered as a prelude to love, a preparatory activity. The bibliography contains 300 titles.—*M. H. Piéron* (Sorbonne).

972. **DeBoer, J. J.** *The determination of children's interests in radio drama*. *J. appl. Psychol.*, 1937, 21, 456-463.—In the main experiment two programs, one a dramatized story of a city girl who brought home a stray dog, the other a fantastic story, "The Mystery of the Space Ship," were presented as usual radio broadcasts to a group of 40 children in grade 5B. The purpose of the experiment was to determine which types of program the children appeared more interested in. A later experiment involved a similar technique with 90 pupils in two classes of the fourth grade. In each experiment observations of the pupils were made. The children appeared about equally interested in the two programs. Different observers were found to have

67% agreement in 80% of the cases. The technique, rather than the tentative results, was believed to be the important contribution of the paper.—*A. B. Blankenship* (Psychological Corporation).

973. **Deutsche, J. M.** *The development of children's concepts of causal relations*. Minneapolis: Univ. Minn. Child Welf. Monogr. Ser., No. 13, 1937. Pp. 104.—The author performed 11 experiments, each of which was followed by a question concerning the cause of the phenomenon which had been demonstrated. The experiments were performed before classroom groups, and each child was asked to write his answer. A total of 700 subjects, between 8 and 16 years of age, were tested. In addition, 335 children of the same age range wrote answers to 12 questions dealing with general phenomena, these questions not being preceded by demonstration. When answers were rated by graduate students as to their adequacy, the quantified scores were found to be related to age, sex, socio-economic status, and the number of words used in giving the answers. An attempt was made to classify the answers into the 17 types of causal relations described by Piaget. The difficulties which were encountered are attributed to the inadequacy of Piaget's classification rather than to the incompleteness of the answers. Materialistic answers predominated at every age, but became more adequate at later age levels. It is concluded that children's reasoning develops quantitatively rather than by stages.—*W. Dennis* (Clark).

974. **George, W. R.** *The adult minor*. New York, London: Appleton-Century, 1937. Pp. viii + 192.—The term *adult minor* in this volume refers to those persons of both sexes between the ages of 16 and 21 who, though legally minors, are effectively adults in more ways than is generally recognized. It is the argument of the book that more general recognition of their possible maturity would be of value both to the adult minors themselves and to the communities in which they live. They should be accorded, the author believes, the responsibilities and rights of "adult minor citizenship," that is, should be made active participants in the civic life of their communities. This can be done inexpensively, easily, and naturally by organizing the young citizens into junior municipalities or other corporate bodies auxiliary to those of the existing system. These junior counterparts of the adult community assist it, or even take over from it the conduct of certain civic affairs, especially those relating more directly to the particular concerns of the adult minor citizens themselves. The author has had lengthy experience (described in Chapters I, II, and V) in developing the well-known Junior Republic of Freeville, New York, and the National Association of Junior Republics.—*C. K. Trueblood* (Harvard).

975. **Hetzer, H.** *Die Forschungsstelle des Vereins zum Schutz der Kinder vor Ausnutzung und Misshandlung*. (The research office of the Society for the Protection of Children against Abuse and Mistreatment.) *Mtschr. KrimBiol.*, 1937, 28, 87.—A psychological and sociological clarification of

the problems of mistreatment of children depends on the continued collaboration of theory and practice, of psychiatrically trained psychologists and nurses. It is an astounding fact that often friendly and affectionate children are subject to abuse, as well as "difficult" ones. The author calls this treatment "mental abortion," and considers it a symptom of a selfish attitude on the part of the mother, who seeks the greatest measure of happiness for herself with total disregard of all responsibility. Statistical data for different countries show a parallel increase in the mistreatment of children with the frequency of occurrence of abortions, divorces and low standards of training. The struggle against such abuses must be based on the development of a desire to assume pedagogical responsibility.—P. L. Krieger (Leipzig/Munich).

976. Huth, A. *Seelische Unterschiede in der bayerischen Jugend.* (Mental differences of Bavarian adolescents.) *Ber. 15. Kongr. dtsch. Ges. Psychol., Jena, 1936*, 239-242.—The basis of this study was a collection of more than one million psychological tests used in giving vocational guidance to almost 100,000 adolescents during ten years. These tests were designed to determine the prevalence of either factor in three pairs of opposites: thinking-remembering, form-language, speed-accuracy. Significant differences were found between cities and rural districts and among different parts of Bavaria. These discrepancies enabled the author to divide the state into three parts on a basis of racial constitution.—H. Beaumont (Kentucky).

977. Inuma, R., & Watanabe, K. [Observations on moving objects drawn by children. Orientation and motion of railway trains.] *Jap. J. Psychol.*, 1937, 12, 393-408.—The subjects were 1648 children of both sexes, in which 4 left-handed children were included, attending kindergartens and primary schools in Japan proper and Formosa. They were instructed to draw a train, but were not forced to do so when unwilling. Of the performances resulting 22 were not trains, 71 were clearly influenced by other models, 12 were obscure in the running direction, and 26 were front views of the train. Regardless of the differences of sex, age and local conditions, more than 80% of the pictures were drawn as running toward the left. The same direction preference also appeared in a study in which the children were asked to put toy trains upon the table. The tendency is to rely upon the natural inclination of muscular movements from left to right. Ease of motion from left to right results in swiftness of drawing, and this fact, from another point of view, implies the running train for children by its vigorous motion. The reason for the small number of the right-directed motion in this study may be inherited left-handedness shifted to the right hand; but 4 left-handed subjects drew two left- and two right-going trains. 26 pictures drawn frontally were all by boys and this shows that they are more precise in observation than girls. English summary.—R. Kuroda (Keijo).

978. Kaila, E. *Über die Reaktionen des Säuglings auf das menschliche Gesicht.* (Concerning the infant's reactions to the human face.) *Z. Psychol.*, 1935, 135, 156-163.—This is an experimental study of three infants, extending the previous work of the author concerning the basis of reactions to the human face—i.e., when and how it is recognized. A short reply by C. Bühler is appended.—G. F. J. Lehner (Brown).

979. Kobayashi, S. [A study on a variation of facsimiles drawn by children.] *Jap. J. Psychol.*, 1937, 12, 375-392.—After review of the similar works of Katz, Stern, Volkelt and Burkhardt, this study was plotted with three principal objects of inquiry, viz., the conditions under which varied expressions in drawing most frequently occur, types of variation and the principles underlying them, and the nature of variation. The author prepared ten kinds of models, which were shown to each subject one by one with the instruction "observe carefully and draw the same thing"; the time was not limited. The subjects were 141 boys and 137 girls between 4 and 11 years old. The results are shown in 5 tables and 67 figures. Variation arises from the children's inability to perceive and express an object as a divided whole. This is due to the non-differentiation of mental structure in their spatial perception, though their age, intelligence and feeling have some relation to it. Variation also occurs when the model weakened its power as a stimulus. From another standpoint it can be said that this variation fundamentally depends upon the principles of stabilization, equilibration, and simplification of figures. This phenomenon is not a negative one, as has hitherto been generally believed, but a positive one showing the active and creative mental power of children. German summary.—R. Kuroda (Keijo).

980. Kupky, O. *Der Anteil des Grossstadtkindes am deutschen Volksgute.* (The share of the child in large cities in the German folk inheritance.) *Z. pädag. Psychol.*, 1937, 38, 209-219.—The German urban child is not a little rootless proletarian, but intensely a German, who shares the same folk-soul as the rural child through his games, songs, folk customs, myths, superstitions, and festivals. Kupky's studies show that these have as much power, although not as much exclusiveness and permanence, as among rural children. The city child still lives in the primitive culture, which is stronger than the industrial environment, but at adolescence he falls increasingly under the destructive influence of rationalism and individualism, while the peasant remains united with blood and soil. The conscious return to blood and soil among urban children and adults through the cultural policies of National Socialism is one of the highest educational tasks, but it will succeed only when the relationship of the child soul to the folk soul is recognized.—M. E. Morse (Baltimore).

981. Lark-Horovitz, B. On art appreciation of children: I. Preference of picture subjects in

general. *J. educ. Res.*, 1937, 31, 118-137.—Tests were made on 461 children aged 6-16 and on a group of 72 specially gifted children, aged 11-16, by showing them 12 carefully selected pictures, representing different subjects. Rank order judgments were required. The results indicate that the preference is definite, a majority of the votes being concentrated on a very few pictures. There is a marked sex difference in preference at the early ages which tends to disappear later. Both the average and the special group show preference for the same pictures at the same age levels.—S. W. Fernberger (Pennsylvania).

982. Low, M. B. Anorexia in children. *New Engl. J. Med.*, 1936, 214, 834 ff.—That the etiologic background of anorexia is often purely psychic becomes evident when it is found that the loss of appetite is cured by hospitalization or by placement in a summer camp or a boarding school. Attempts to make children's weights conform to the standards of charts are the principal cause of anorexia. Probably the most prominent cause in an otherwise well child is someone's determination to make a child eat a definite amount of food at each meal, day in and day out. At least three facts enter into the explanation of this biologic phenomenon of the young person refusing to eat: (1) It is a common trait of human nature to rebel against arbitrary authority. (2) It is again a part of human nature to glory in attention. (3) It is well known that the gastric contractions due to hunger and the physical discomfort attendant on them are abolished in the presence of emotions. In treatment one must make sure that a diet adequate as regards quantity and quality is provided; one must see to it that no child is forced to eat (except in rare circumstances, as for instance in typhoid fever); and one must eliminate organic disease (focal infections, anemia, chronic pyelitis, tuberculosis, syphilis, nasal obstructions, carious teeth).—(*Child Developm. Abstr.* XI: 2051).

983. Marshall, E. L. The objectivity of anthropometric measurements taken on eight- and nine-year-old white males. *Child Developm.*, 1937, 8, 249-256.—Objectivity findings—"objectivity being considered as a function of the differences when initial observations are made by one anthropometrist and repeated measurements are taken by a second anthropometrist"—are presented for each of 15 anthropometric dimensions taken at six monthly intervals on 25 eight- and nine-year-old boys. "Preliminary computation of the mean directional differences yield results which indicate that systematic differences in measurement technique of the two anthropometrists for each of the 15 dimensions are of negligible importance." Objectivity tables derived from pairs of measurement observations indicate that "the thickness of skin and subcutaneous tissue on the back of the thorax was measured with the least absolute error. The greatest absolute difference was encountered in measurements for stature, sitting height, and bi-acromial diameter."—F. D. McTeer (Wayne).

984. Mast, E. T. Motivating factors in child learning. *Child Developm.*, 1937, 8, 273-278.—A puzzle box provided the experimental situation which was presented individually to each of 47 nursery school children. If the subject did not succeed within five minutes, he was asked to come back and try the puzzle again on another day; these five-minute sittings were continued until the child solved the puzzle or gave up entirely. The box had a glass lid through which the child could see the toy auto which he was to have "for keeps" as soon as he got the box open. In the course of opening the box it was necessary for the child to bring a stylus in contact with a brass plate on the box; this contact rang a doorbell. "The speed of learning to open a simple problem box does not appear to be correlated with age or IQ. There is a tendency for those subjects who were definitely disturbed by the sound of the bell to take longer to open the box than those subjects who were not disturbed by the bell. The difference in time scores obtained on the two groups gives indications that the apparent emotional disturbance of the bell strongly influenced the time."—F. D. McTeer (Wayne).

985. McGehee, W. The free word association of elementary school children. *J. genet. Psychol.*, 1937, 50, 441-455.—Free association times to 55 stimulus words were secured for 400 children of both sexes from 7 to 10 years of age inclusive. Median reaction times, together with P. E.'s, are given for each word in tables presenting separately the data for each sex at each age. Generalizations concerning the relative length and variability of reaction times as they occur in different groups are stated. The degree of mental development played only a small part in the speed of reaction time. Familiarity with the stimulus word tended to affect the reaction time. It is suggested that further investigation, securing introspective data from the children who serve as subjects, is necessary before the etiological factors and the significance of differences in reaction time can be determined.—E. Heidbreder (Wellesley).

986. Mills, H. J. The prognostic value of the first interview. *Smith Coll. Stud. soc. Work*, 1937, 8, 1-33.—Report of first interviews with parents of children treated at the Hartley-Salmon Clinic for Child Guidance, Hartford, Conn. From the first interview it was possible to predict change in the child and the effect of change upon the parents' attitude toward the child.—R. H. Brown (Clark).

987. Murphy, L. B. Social behavior and child personality. An exploratory study of some roots of sympathy. New York: Columbia Univ. Press, 1937. Pp. ix + 344. \$3.50.—Sympathy is here defined in its social context, sharing the value of pain or joy with another person as he values it. The focal point selected for study is the analysis of responses of two- to four-year-old children in nursery school to distress in other children. Included are studies of the children's spontaneous sympathetic responses via observations during free play, inventories of social behavior, and interviews with parents; also responses

to "framed" "distress situations." The investigator concludes that sympathetic responses seem to be primitive and reasonably universal; learned sympathetic responses are built into the child's spontaneous interest. The study describes motivation and development of sympathetic responses in the individual child and in the group, also forms of sympathetic responses in young children. These generalizations are made: "The fundamental personality make-up of the child, the particular situation which the child has in his group . . . will determine the objects of his sympathy and the motives . . . which color it"; and "It is not true that the child under four is an overwhelmingly self-centered person."—*E. E. Alpern* (Providence Child Guidance Clinic).

988. Nishida, T. [On the substitute actions in various play-situations.] *Jap. J. Psychol.*, 1937, 12, 360-374.—This study aims to analyze play situations from the viewpoint of the substitute action as a way of clarifying the nature of play. Children of 4 to 9 years old were used, and many kinds of substitutions such as a piece of cardboard for chocolate, a gum orange, a newspaper or a wooden block for a ball, a building block for a toy car, a stone for a building block, a piece of crayon for a pencil, scissors made of cardboard for real scissors, and a piece of cardboard painted brown for chocolate were made. Play situations may be classified into two kinds according to whether the aim of an action is definite or obscure. In the former case acceptance of a substitute is very difficult, but in the latter it is quite easy. The first has frequently been experienced when the situation is serious, as in eating or drinking, but the other has been done when there was a peculiar quality of play. English summary.—*R. Kuroda* (Keijo).

989. O'Brien, J. *The novel of adolescence in France; the study of a literary theme.* New York: Columbia Univ. Press, 1937. \$2.50.—*R. R. Wiloughby* (Brown).

990. Pancratz, D. S., & Marquess, M. J. *Fetal movements in rabbits and cats.* *Amer. J. Physiol.*, 1937, 119, 382.—"Both spontaneous movements and response to tactile stimulation have been studied and photographed."—*T. W. Forbes* (Harvard Bureau for Traffic Research).

991. Phillips, M. *The education of the emotions through sentiment development.* London: Allen & Unwin, 1937. Pp. 318. 8s. 6d.—A study of the development of sentiments in the child and young adult. The method was to obtain from 275 adults of both sexes, all ages and various types of occupation written accounts of the development of any interest or sentiment, "showing the stages of its development, the sources from which it derived, and the nature of the satisfaction obtained from it." Sentiments were described for persons, things, social groups, intellectual interests, sports and crafts, esthetic objects and pursuits, and various abstract ideals. The author traces the gradual change and increasing complication in the linkages between (1)

cognitive apprehension and understanding and (2) emotional and impulsive tendencies. As intelligence develops and the cognitive material becomes richer and less egocentric, certain definite patterns of transference and resynthesis of the corresponding emotions appear. The bearings of this development on education are discussed.—*M. D. Vernon* (Cambridge, England).

992. Piaget, J. *La construction du réel chez l'enfant.* (The construction of the real in the child.) Paris: Delachaux & Niestlé, 1937. Pp. 398. Fr. 40.—This volume, with its emphasis on practical intelligence, corresponds to previous works of the author (*Representation of the World and Physical Causality in the Child*). It deals with the genesis of explanatory categories: the object, causality, and time.—*M. H. Piéron* (Sorbonne).

993. Piaget, J. *La naissance de l'intelligence chez l'enfant.* (The birth of intelligence in the child.) Paris: Delachaux & Niestlé, 1937. Pp. 429. Fr. 40.—This book is the product of research on the first two years in the child's life, that is, the study of intelligent behavior before the appearance of language. It is a continuation of previous works by the author on language, thought, judgment, and reasoning in children. Intelligence does not appear at a given moment in the child's mental development, like an arranged piece of mechanism. Preparation for its coming must be brought about by the exercise of reflexes and the formation of certain habits. Three stages in this preparation are to be distinguished: the exercise of reflexes, the acquisition of primary forms of adaptation (the act of sucking, prehension, etc.), and the primary circulatory reaction. The above is not to be included in the term intelligence as properly defined, as intelligence begins with procedures designed to make certain interesting experiences lasting. Then we find a beginning of a coordination of secondary systems by application to new situations. Finally the child begins to discover new means for active experimentation and to invent new methods through the process of mental combination.—*M. H. Piéron* (Sorbonne).

994. Piness, G., Miller, H., & Sullivan, E. B. *The intelligence rating of the allergic child.* *J. Allergy*, 1937, 8, 168-174.—The investigators studied 145 allergic children referred to the Los Angeles allergy clinic. Most were under 12 years of age, the range being 5 years, 5 months to 15 years, 4 months; median age 8 years, 11 months. Intelligence tests used included Stanford-Binet, Goodenough drawing, Detroit primary intelligence, and National intelligence. The results were compared with findings in school children generally of Los Angeles and with a group of epileptics. Found: median IQ, allergic children 104.1, Los Angeles school children 105, epileptics 92.4. The authors conclude: children with asthma have intellectual levels similar to a normal group, and the variations within the groups are about the same. School placements, with reference to chronological ages, are also similar. Feeble-minded

appear to be fewer among the allergic, but the difference is not significant.—S. J. Beck (Michael Reese Hospital).

995. Pratt, K. C. The organization of behavior in the newborn infant. *Psychol. Rev.*, 1937, 44, 470-491.—The author summarizes as follows: "(1) From the stimulus-receptor aspect there appears to be little specificity of behavior. (2) Most of the responses tend to involve most of the major segments of the body, and the participation of smaller parts is likewise quite conspicuous. (3) Therefore, the neonate manifests highly generalized rather than specific types of behavior. (4) A quantitative expression of stimulus-receptor-effector relations seems to offer the best means of comparing one response with another at a given age level, or the behavior observed at one age period with that at another age period. (5) The extreme 'organismic' view of behavior tends to ignore the differentiation among responses which actually exists. (6) The opposite view of behavior as reflex in nature tends to focus attention upon what is happening in some particular segment and to ignore what is taking place in other parts of the organism. (7) Perhaps the solution of the problem of behavioral organization will be the indication of the relative degree of participation of different parts of the organism."—A. G. Bills (Cincinnati).

996. Rosenfeld, M., & Snyder, F. F. Intra-uterine respiration in the rabbit and human and its significance in relation to the breathing of amniotic fluid. *Amer. J. Physiol.*, 1937, 119, 393.—"A motion picture record was obtained of respiratory movements of rabbit fetuses observed through the transparent uterine wall, following exposure of the uterus beneath the surface of a saline bath. Arrest of fetal respiration induced by anoxemia is illustrated. In the human, the rhythmical excursions of the abdominal wall resulting from the transmitted respiratory movements of the fetus are seen."—T. W. Forbes (Harvard Bureau for Traffic Research).

997. Schultze, O., Schaar, B., Brommauer, W., & Schirber, K. Persönlichkeit und Kindesalter samt einer Theorie der Persönlichkeit. (Personality and childhood, with a theory of personality.) *Beih. Z. angew. Psychol.*, 1937, No. 78. Pp. 185.—This is an extensive study of children 8-13 years of age over a period of about 2 years, viewed in the light of their social background, their relationships to the parents, teachers and playmates, their reactions to leadership and group behavior, and the influence of these and other factors on their personality development. The volume is a joint production only in so far as the individual work of each author pertains to childhood and personality.—G. F. J. Lehner (Brown).

998. Willoughby, R. R. Sexuality in the second decade. *Monogr. Soc. Res. Child Developm.*, 1937, 2, No. 3. Pp. 57.—Critical summaries of such factual studies as enable some generalization about adolescent sexuality are presented in the following order: material on imaginal or otherwise implicit

sexuality, in order of increasing awareness; material on autosexuality in its various aspects and manifestations; a section devoted to disturbed or biologically anomalous sexuality; and a concluding chapter on full heterosexual coitus, introduced by a short section on heterosexual approaches. Observations attest that the sexual impulse appears spontaneously, while the forms of its gratification are somewhat gradually acquired. Adolescence does not initiate, but only intensifies, specifically sexual behavior; physiological findings seem to show that this intensification is controlled by endocrine readjustment. The author concludes that "the patterns of sex development current in any human society are chiefly a function of the restrictions imposed upon the natural development of the function by the particular accidents of that society."—E. D. Hunt (Brown).

999. Wilson, F. T., & Flemming, C. W. Correlations of chronological age, mental age, and intelligence quotient with other abilities and traits in grade I. *J. genet. Psychol.*, 1937, 50, 323-337.—Chronological age, Binet mental age and Binet intelligence quotient gave varying degrees of correlation with 106 other measures and appraisals of 25 first-grade children in the Horace Mann School, Teachers College. When the other measures were grouped under five general headings—reading, letter abilities, mental tests, psychophysical measures, and personality measures—the following tendencies appeared: MA tended to give moderate correlations with reading, letter abilities, and mental tests; IQ tended to give correlations somewhat smaller than MA with the same groups of measures; CA tended to give still lower correlations with reading. With a very few exceptions, all other correlations were low, many of them nearly zero.—E. Heidebreder (Wellesley).

1000. Zietz, K. Physikalische Theorien bei Kindern. (Physical theories of children.) *Ber. 18. Kongr. dtsch. Ges. Psychol.*, Jena, 1936, 232-238.—The author questioned 240 boys between the ages of 10 and 14 concerning their theories in explanation of physical phenomena, including thunder, wind, stars, clouds, change of seasons, electricity, engines, etc. He found that these theories were usually realistic, did not involve magical interpretation, and only occasionally contained anthropomorphic elements. Noticeable tendencies were those towards substantiation (mechanical interpretation of natural forces), reduction to a lower physical level, establishing an analogy between the unknown and the known, and reasoning in circles ("wind is caused by ocean waves; ocean waves are caused by wind"). Physics instruction should take the psychology of the child and his concepts into account more than has been done thus far.—H. Beaumont (Kentucky).

[See also abstracts 705, 720, 728, 730, 735, 743, 824, 830, 856, 863, 888, 895, 908, 913, 940.]

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